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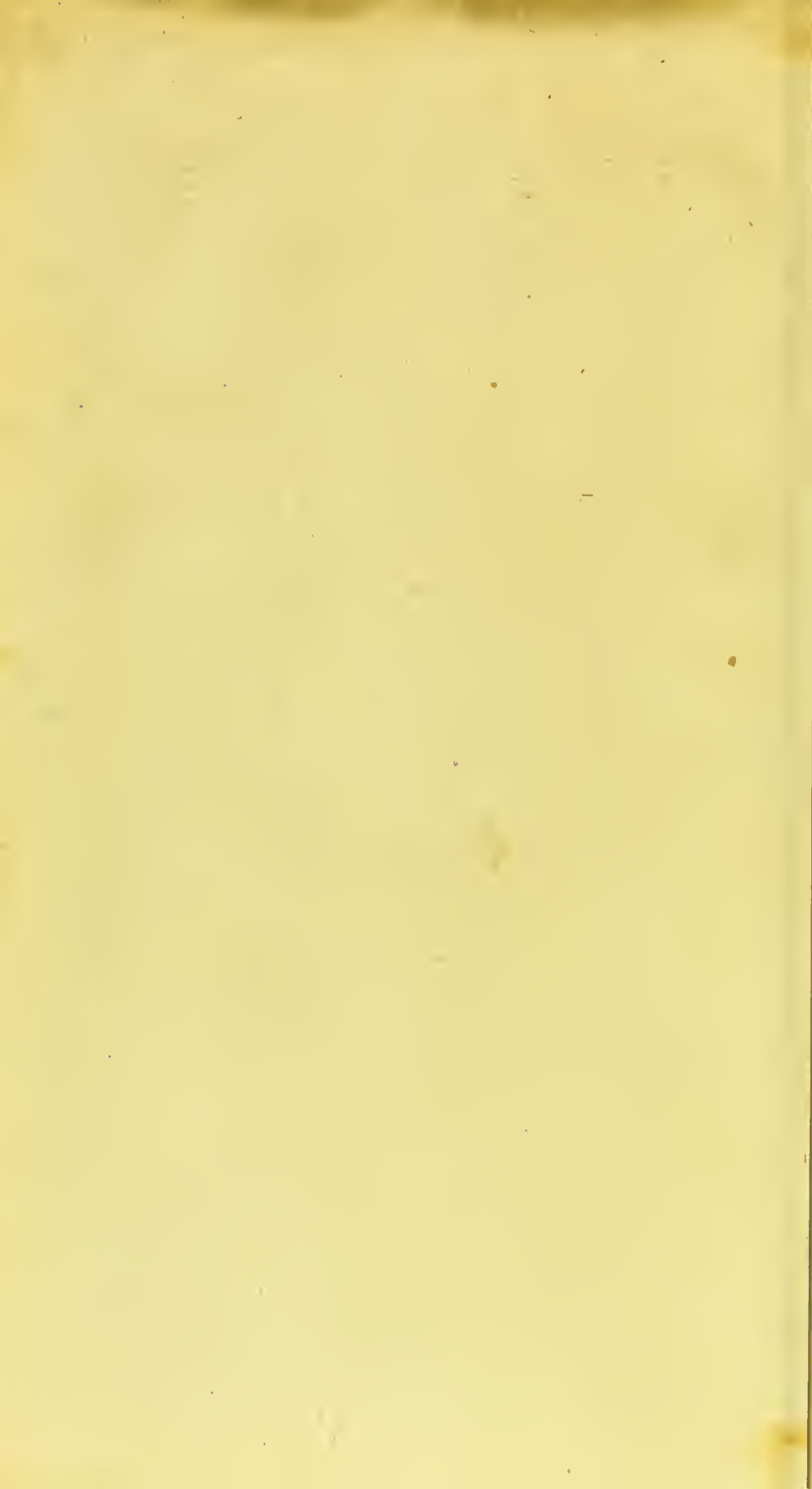
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C A S E S

I N

S U R G E R Y;

W I T H

INTRODUCTIONS, OPERATIONS

A N D

R E M A R K S.

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By JOSEPH WARNER, F. R. S.

And Senior Surgeon to *Guy's Hospital*.

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The FOURTH EDITION, with considerable  
ADDITIONS.

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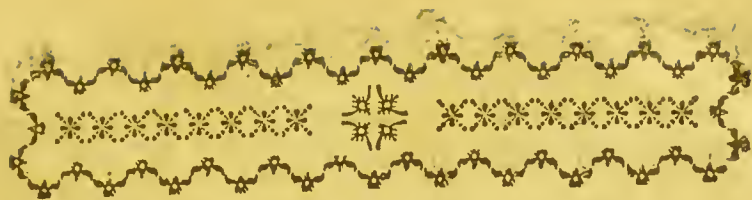
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# C A S E S I N S U R G E R Y.

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## C H A P. I.

*An Introduction to Disorders of the Skull, the Brain, and its Membranes, arising from external Causes.*

THE internal surface of the Skull  
T is in every part invested with a  
strong membrane of a tendinous  
structure, composed of two *Laminæ*; which  
membrane is universally known to anat-  
omists and Surgeons by the term *Dura*  
*Mater*.

## 2 CASES in SURGERY.

THE external *lamina* of the *dura mater* adheres to every internal part of the Scull; but to the upper part of the Scull, its adhesion is not so firm as to the lower part of it. In young people, the adhesion of the *dura mater* to the Scull is greater than it is in adults.

THE *dura mater* detaches a great number of filaments to the internal surface of the *cranium*; which penetrate the pores of the bones, principally at the sutures; and by passing through the sutures, they form a communication with the external covering of the Scull, called *Pericranium*.

MOST of these elongated fibres of the *dura mater* are blood vessels; which being ruptured in separating this membrane from the internal parts of the *cranium*, there appear numbers of bloody particles on the external surface of the *dura mater*.

The internal coat, or *lamina* of the *dura mater*, is smooth and polished; and is lubricated with a kind of lymph, as the internal surfaces of the *pleura*, the *pericardium*, *peritonæum*, and *tunicæ vaginales* of the testicles are.

THE *dura mater* is supplied with arteries from the external carotid, the internal carotid, and vertebral arteries: the largest of which,

by

by way of distinction, are termed *arteriæ duræ matris*.

THE *arteria duræ matris* on each side the *cranium* passes through a foramen in the *os sphenoides*, called the Spinal Hole; their ramifications are continued to the superior part of the *dura mater*, where they unite.

THESE arteries by their pulsation gradually form very considerable impressions on the internal surfaces of the parietal bones: at the anterior inferior angles of which there is a deep groove; which contains a part of the trunk of this artery.

THE *arteriæ duræ matris* are branches of the external carotid arteries; one on each side the *cranium*, which from their situations are called the middle arteries of the *dura mater*.

THE anterior arteries of the *dura mater* are likewise branches of the external carotid arteries, but they are small.

THESE arteries enter the Skull through the corners of the orbitary fissures of the *os sphenoides*, and are divided into ramifications; which communicate with those of the *arteriæ duræ matris*.



## 4 CASES in SURGERY.

THE posterior arteries of the *dura mater* are branches of the vertebral arteries. These arteries enter the Scull through the great foramen of the *occipital* bone. These Vessels penetrate the substance of that membrane on each side of the *processus sphenoidalis* of the *os occipitis*.

AMONGST the several arteries of the *dura mater*, which I have here taken notice of; an attention to the sizes and situations of those arteries called, *arteriæ duræ matris*, is a matter of some consequence to the Surgeon in the operation of the trepan, so far as relates to the inconvenience of a troublesome and profuse *Hæmorrhage*, if either of the trunks of these vessels happens to be wounded in that operation.

THE veins of the *dura mater* are of two kinds. Some of these vessels are small; they are like the veins of the other parts of the body, and accompany the arteries in their course.

SOME of the veins are large; of a peculiar kind; and of a triangular form: they are very strongly composed, and are known to anatomists by the names of Sinuses.

THE sinuses of the brain are numerous; but there are only three of them that are absolutely



solutely necessary to engage the attention of the Surgeon in the operation of the trepan; these are the superior longitudinal sinus, and the two lateral sinuses. The course of the superior longitudinal sinus is from that eminence of the *os ethmoides* known by the name of *crista galli*, (placed on the inside of the Scull in a chasm formed for this purpose in the basis of the *os frontis*,) and from thence continued to near the middle portion of the *occipital* bone, where it terminates in the lateral sinuses.

Its situation is immediately under the sagittal suture: the situation of the lateral sinuses is on the inside of the *os occipitis* upon its middle lateral parts just above the *cerebellum*. The course of the lateral sinuses is continued to the right, and to the left internal parts of the *os occipitis* quite to the internal and inferior parts of the *os petrosum*; being partly confined in grooves, till they arrive at the foramen formed on each side the Scull betwixt the basis of the *os petrosum*, and the superior lateral part of the *processus basilaris* of the *os occipitis*. The lateral sinuses pass out of the Scull through these irregular spaces; and at length they form those vessels called the internal jugular veins.

UNDER the *dura mater* is placed a fine membrane called the *Pia Mater*.

THE *pia mater* is composed of two *laminæ*; these *laminæ* are joined together by means of an intermediate cellular substance. The superior *lamina*, which is very distinct on the *medulla oblongata*, is by some anatomists treated of as a third coat; from its texture, and supposed resemblance to a spider's web, it is termed *membrana arachnoides*: this membrane has no discoverable blood vessels: In that particular it may be compared to the cuticle.

THE *pia mater* invests every part of the brain; to which it firmly adheres. The inferior *lamina* of the *pia mater* forms several elongations: These Elongations insinuate themselves into the very substance of the brain, betwixt its circumvolutions.

THE *pia mater* is connected to the internal *lamella* of the *dura mater* by many veins which open into the sinuses: the *pia mater* is copiously supplied with arteries from the internal carotid and vertebral arteries.

THE uses of the *dura mater* are to line the inside of the *cranium*, and to serve the purposes of an internal *periosteum*. The *dura mater*

*mater* serves likewise to defend the brain from the hardness, and inequalities of the bones of the Scull; it serves to contain, and partly to compose the sinuses of the brain; and to form the several processes of the *cerebrum* and *cerebellum*.

THE uses of the *pia mater* are, to invest the surfaces; and even the internal parts of the *cerebrum* and *cerebellum*; as well as to support the ramifications of those vessels with which they are supplied.

THIS brief account of the membranes of the *cerebrum* and *cerebellum*, and their principal vessels, I imagine, may be of some use so far as relates to the explanation of those effects that are often produced from fractures of the Scull; and from concussions of the brain: in some degree too, this previous knowledge may possibly serve to account for the causes of many of those symptoms that arise in consequence of these accidents; as well as give the younger Surgeon an idea of the situation of those parts, which by authors are taken notice of as improper places for the application of the trepan.

FOR these reasons I have prefixed this short account of the anatomy of these parts to the

## 8 CASES in SURGERY.

subsequent cases of fractures of the Scull, and concussions of the brain; that by these means, the descriptions which I have given of the nature of the accidents; their consequences; and the methods prescribed for relief, might be well understood by those who are not already perfectly versed in the anatomy of these parts.

### CASE I.

*Of a fractured Scull with a Wound of the Longitudinal Sinus.*

**I**T is a maxim with almost all writers in Surgery, to speak of the impropriety and danger of the application of the trepan, upon certain parts of the *cranium*, previously to a description of the operation. The parts of the Scull which are looked upon as improper for the admission of the instrument, are the sutures in general; the sagittal suture in particular; the whole of the *os occipitis*, and the anterior, and inferior part of the *os frontis*. But notwithstanding it may be right to have a general regard to these Rules, yet there are instances where they cannot take place but by wholly neglecting the operation.

THE



THE particular attachment of the *dura mater* to the futures of the Scull in general, and the course of the longitudinal sinus under the sagittal future in particular, are not sufficient reasons for absolutely forbidding the application of the instrument upon these parts; since fractures of the Scull are sometimes so circumstanced as to require it, and to show, that the patient is otherwise incapable of being relieved by the operation, if performed upon any other part of the Scull.

THE rule laid down by Mr. Cheselden, in his observation upon Monsieur *Le Dran*, seems to be too positive, where he says, "that no instrument should ever be applied over the longitudinal sinus, nor ought the instrument to be introduced between that and the Scull."

As some reason and excuse for my dissenting from the opinion of a gentleman so very eminent in his profession, and to whom the world is so greatly indebted for his many improvements in Surgery, I am induced to offer the following instance as a proof of its necessity under certain circumstances, and the little danger there seems to attend even a wound of the longitudinal sinus. An instance of  
this

this Mr. *Chefelden* has given us himself, where he says, “ the longitudinal sinus, or the  
 “ vessels that empty into it, were wounded by  
 “ a Surgeon,” and which he says, “ the  
 “ Surgeon stopt with dry lint; and had the  
 “ good luck to save his patient.”

R. J. aged 13, on the 16th of *November*, 1749, was struck with a pointed piece of iron, upon the upper and middle part of the head, so immediately upon the sagittal future as to force a bit of both parietal bones into the longitudinal sinus. Immediately upon receiving the blow, the boy fell down, and became senseless; but in a few minutes afterwards he recovered, and continued well for six days; at the end of that time, he was seized with epileptic fits; the returns of which were very frequent, accompanied with vomitings, and a palsy of the left side; (*hemiplegia*). the sight of his left eye was perfect, but his right eye was so affected as to make all single objects appear double to him. These symptoms continued till the 27th of *December* following, when he was put under my care. Upon examination, I found the circumstances as described above; and immediately afterwards I proceeded to the operation. Upon  
 taking



taking off the scalp, there issued a continual stream of blood from the hole made through the bone; I applied the trepan so as to include the injured part of the bone, and the sagittal suture, within the crown of the instrument. Upon taking out the circular piece of bone, there appeared a wound which was made into the sinus by the bits of bone that were then found sticking in it; the wound I enlarged with a lancet, in order that I might extract the bits of bone with less violence than I otherwise could have done. Upon taking out the bits of bone the discharge of blood was increased; but upon the application of dry lint, the *hæmorrhage* stopt. Immediately after the operation the patient fainted, but soon recovered; in half an hour's time, he expressed an agreeable sensation on his left side; and by the next morning, he had so well recovered the use of his limbs as to be able to move them freely to any part of the bed. In six days after the operation he perfectly recovered the sight of his right eye; from this time he continued to mend till the 19th of *January* following, when he accidentally received a blow upon his head. Soon after this accident he complained of a numbness in his left arm, and a return of the  
dimness

dimness in his right eye. Upon taking off the dressings, there appeared some clots of blood upon them, and his head was considerably disordered till the 26th of the same month, when he grew tolerably well again. Upon observing that a fungus had risen a considerable height above the surface of the Scull, which would not subside with proper applications, assisted by pressure, I pared it off; this gave him very little pain; but for a few minutes afterwards he complained of a numbness all over him, which soon disappeared, and he continued well till *February* the 2d; when he complained of a sickness in his stomach, and of acute pains in both his elbows. *February* the 3d, as I was dressing him, he was suddenly attacked with a shivering, and the *dura mater* appeared particularly prominent; this gave occasion to my dividing it; upon which I discovered a piece of bone sticking in the brain; the piece of bone I endeavoured to extract, but meeting with considerable resistance in the attempt, I was obliged to enlarge the wound, which admitted of its being more easily removed.

A FEW days after this, he complained of considerable pain on the right side, about  
two

Two inches below the old wound ; upon pressure the pain increased. The head being shaved, there appeared a small discoloration ; which induced me to repeat the operation upon this part. Upon taking out the bone, the *dura mater* appeared considerably elevated and discoloured : for which reason I divided that membrane, and gave issue to a large quantity of matter, that was confined underneath it. On the next day he was free from pain ; but on the day following, his pulse grew bad, and so continued till that evening, when he expired.

UPON opening the head, a considerable quantity of matter was found in the substance of the brain, particularly in the right hemisphere.

*Query.* Could the want of success in this operation be attributed to the wound of the *sinus longitudinalis* ? Is it not reasonable to hope that the operation might have been successful, if no extraneous body had been lodged in the substance of the brain ?

THE wound of the *longitudinal sinus* did not probably produce any dangerous symptoms, because it never bled again after being once stopped ; (which was easily effected ; ) and if we credit

## 14 CASES in SURGERY.

credit the fourth observation of *Marchetti*, there does not seem to be so much danger attending a wound of this sinus as is generally apprehended by Surgeons.

### CASE II.

*Of a fractured Skull, where the Operation was successfully performed upon the Lambdoidal Suture.*

**MAY** 1754, *H. A.* aged 18, received a blow on the posterior part of the head upon the lambdoidal suture ; at the distance of about an inch and a half from its upper angle, which lacerated the scalp, and fractured the Skull. Upon examining the wound, and finding it thus circumstanced, he was immediately scalped ; this process of the operation gave me an opportunity of discovering the nature and extent of the injury done to the bone. The fracture extended to about three inches in length, obliquely upwards upon the left parietal bone ; and one of the *ossa triquetra* appeared visibly depressed and beaten inwards upon the *dura mater*. Upon receiving the blow, the boy fell down, and became senseless : these symptoms



Symptoms were soon after succeeded by vomitings, and a discharge of blood from the nose. In an hour after the accident, he was brought into the Hospital ; and the operation was performed upon the lambdoidal suture, so as to include the depressed bone ; which could not otherwise have been removed. Upon taking out the piece of bone, the *dura mater* appeared prominent, and tense ; I divided the *dura mater* with a lancet ; and gave issue to a quantity of serum that was confined underneath it. From the great extent of the fracture, I judged it necessary to apply the trepan a second time ; which was accordingly done upon the parietal bone, at the distance of about an Inch and half from the former place. Here the *dura mater* was in its natural state ; for which reason I thought it unnecessary to divide it. The next morning after the operation, the patient was blooded on account of a fulness in his Pulse, and of the stupor which still remained in some degree ; in the evening an emollient clyster was administered, which afforded him speedy relief ; from this time the patient continued to mend till he perfectly recovered ; which was in nine weeks after the operation.

## R E M A R K.

IN the preceding case, the attachment of the *dura mater* to the lambdoidal future appeared very inconsiderable ; seeing the nature of the accident was such, as rendered the application of the instrument upon that part, absolutely necessary to the taking off the pressure from the subjacent membranes and brain, which they laboured under from the depressed bone, I am convinced there could be no doubt of the propriety of operating upon the future. The course of the longitudinal, and lateral sinuses, were here quite out of the question. It has been observed by writers, that when the head receives so violent a blow as to fracture the Scull, the natural attachment of the *dura mater* to the internal part of the *cranium* is broken off, and consequently there can be very little danger of injuring the subjacent membrane with the teeth of the saw. Again it is agreed, under some circumstances, to be absolutely necessary to divide the *dura mater*, to give issue to any extravasated fluid that is confined underneath it, which is sometimes practised with success ; for these reasons



reasons I am of opinion, that the absolutely forbidding the application of the trepan upon these parts, is a rule too generally laid down by authors ; since, by strictly adhering to this maxim, the trepan must necessarily be omitted in cases that are not otherwise to be relieved ; in consequence of which the patient is deprived of such benefit, as might probably accrue from the operation : I have more than once, since these cases were first published, performed the operation of the trepan upon the sagittal suture, without bringing on any inconvenience.

### CASE III.

*Of a Man where the Operation of the Trepan had been successfully performed upon the Os Occipitis.*

**I**N the two preceding cases, I have given instances where it was absolutely necessary to apply the trepan upon the sagittal and lambdoidal sutures. In the following, it will appear, that the trepan may be likewise safely applied upon the *os occipitis*, contrary to the general opinion of authors.

On the 21st of February 1753, I gave a lecture, in the *Theatre* at *St. Thomas's Hospital*, upon the brain of a man who was executed at *Tyburn*. Upon sawing through the Scull (which I have now by me) I observed that he had formerly been trepan'd upon the *occipital* bone. The instrument appeared to have been applied upon the *os occipitis*, at least an inch distant from the upper angle of the lambdoidal suture, and very near to the left side of the *fulcus*, which is formed in that bone for the reception of the posterior part of the longitudinal sinus.

THIS operation must have been performed a considerable time before the man was executed, because there was a firm *cicatrix* of the integuments. There was not the least appearance of a callus which had shot from the circumference of the hole made through the bone by the circular saw. The cure seemed to be brought about merely by a strict adhesion of the *dura mater*, to the circumference of the opening made through the Scull, and by an elongation of the integuments which compose the scalp. The principal reasons given by authors for the impropriety of the application of the trepan upon this bone, are these :

these : the unevenness of its external and internal surfaces ; and the course of the longitudinal and lateral sinuses.

BUT the first objection can be of no great weight ; and as the chief sinuses possess only the upper and middle lateral parts of the *os occipitis*, the operation may, contrary to the general opinion, be safely performed upon this bone, on either side the lambdoidal suture, as low down as the first occipital ridge ; corresponding to which, on the inside, are the lateral sinuses.

FROM what has been already observed in the preceding cases, I think it may be fairly concluded, that there is no part of the Scull, upon which the operation of the trepan may not be performed in cases of emergency, except at the anterior inferior angles of the parietal bones ; on the internal part of which the *arteriæ duræ matris* run ; and on the anterior and inferior part of the *os frontis*, where its tables are well enough known to be at a considerable distance from each other in adults, and by this means to form a cavity, distinguished by the name of the *sinus frontalis*.

## C A S E IV.

*Of a Fracture of the Os Occipitis successfully treated.*

**C. D.** a tradesman aged 40, in the *Borough* of *Southwark*, fell from his horse, and pitched upon the posterior part of his head. The accident happened a few miles distant from his house ; the poor man was conveyed home in a perfectly insensible state, and his family Surgeon was immediately sent for ; on the day following I was called in to his assistance. Upon enquiry, I discovered a considerable contusion on that part of the scalp where the blow had been received. This led me to remove a circular piece of the integuments, that I might examine the surface of the Skull. The superior part of the *occipital bone* was fractured : I applied a trepan upon the fracture, and removed a portion of the Skull. The *dura mater* was in part covered with extravasated blood : this was washed away with a sponge dipt in warm water, and the patient was dressed as usual. He was treated with occasional evacuations ; such as bleeding, purges,

purges, and clysters. His diet was of the most simple kind ; and he was so fortunate, as to be restored by such means to his perfect health. It must be remarked, that for ten days the poor man remained perfectly insensible ; and that when he was restored to his senses, he informed me, that he had the idea of having been just to bed,



## C H A P. II.

*A Concussion of the Brain, attended with uncommon and fatal Circumstances.*

**T**H E celebrated *Celsus*, in his 4th Chapter, book 8th, *De Calvariâ Fractâ*, asserts, that the following symptoms, to wit, bilious vomitings, a loss of sight, loss of speech, bleeding at the ears and nose, a falling down, the patient lying senseless as if asleep, do not happen without a fracture of the bone. But notwithstanding this maxim be so positively delivered to us by that elegant and much approved author, I am nevertheless certain, that some or all of these symptoms do frequently arise from violent concussions of the brain, producing an internal extravasation, where there is no fissure or fracture of the bone to be discovered; and I am farther assured, that these shocks of the head are productive of every bad symptom, and very often of such symptoms and consequences, as prove much worse than those that are in general observed to arise from fractures of the Scull, where the greatest violence is sometimes known to be done.



done to one or more of its bones, without communicating any great injury to the brain itself, and which admit of a successful treatment. In the same chapter the great *Celsus*, sometime after having delivered his opinion upon this subject, proceeds to speak of the custom of his predecessors, regarding the proper time for the performance of the operation of the trepan in fissures or fractures of the Skull; and he takes notice, that it was the practice of the more ancient Physicians, to have immediate recourse to instruments, with which they cut out the bone in almost every fissure or fracture of the Skull; but, says *Celsus*, it is far the best way first of all to try the effects of plaisters for several days, that are composed on purpose for the relief of such injuries of the Skull, before we proceed to the operation, and not to make use of instruments till there is an absolute necessity for so doing: of which such symptoms must determine us as he describes. The modern opinion, amongst men of judgment and experience, is exactly conformable to that of the Physicians who lived before *Celsus*'s time, whom *Celsus* styles *Antiquiores Medici*; the operation of the trepan in fissures or fractures of the Skull (unless

under very particular circumstances) being always judged adviseable, and in general it is from experience found, that the sooner this operation is performed the more successful it proves. It is also allowed to be equally adviseable in concussions of the brain, when the part injured is pointed out, and the symptoms are such as indicate a local affection; but where the disorder of the brain arises from a general concussion of the head, without any appearance of a local complaint, we must under these circumstances have recourse to evacuations by bleeding in the temporal artery, neck, or arm, which are occasionally to be repeated; we must likewise have recourse to purges; stimulating and purgative clysters; to the application of blisters to the back part of the head, or to the back part of the neck; which is the only practice to be recommended in these cases, and merely because there is no indication where to apply the instrument; these methods I have sometimes known to succeed beyond my expectation; at other times I have observed, when these methods have been followed with the greatest judgment, that they have afforded a temporary relief only; the violence of the symptoms recurring after several days interval, and at length terminating

minating in death ; an instance of which, on account of its singularity, I have thought proper to describe in the following words :

IN the Year 1748, *R. L.* a boy of 14 years of age, had the misfortune to fall from the mast of a ship, and to pitch upon the back part of his head a little above the conjunction of the parietal bones with the occipital bone ; I was informed of his having been taken up senseless. In a few hours after the accident, he was put under my care ; upon examination, the scalp appeared contused, and somewhat lacerated : the symptoms then attending him were a slight bleeding at the nose and ears, accompanied with vomitings ; these I judged were sufficient reasons for removing the contused and lacerated scalp ; which was immediately put in execution, that I might be enabled to form a more certain judgment of the state of the bone than otherwise I could have done ; but as neither a fracture nor fissure of the bone appeared, I was for this reason induced to defer the farther processes of the operation till I had tried the effects of more gentle methods. In the space of five days after the accident, the boy was twice let blood in the arm, and had

had one purging clyster given him; these methods relieved him so much, as seemingly to restore him to perfect ease and health; in which state he remained for ten or eleven days; during this time, he went abroad, and played about with his companions as though nothing had happened to him; but on a sudden, he was seized with a severe rigor, succeeded by a feverish heat; his wound very soon after this attack appeared spongy and dry; and his original symptom of vomiting returned: he now complained of considerable pain in the fore part of his head; but he had no complaint in the neighbourhood of the wound: at intervals he was delirious: for these reasons the operation of the trepan was thought adviseable: it was debated, which was the proper part of the Scull for performing the operation upon; whether on that part which had received the blow, or upon that part which he now complained of; the latter was determined upon, and put in practice; but there was no extravasation betwixt the *cranium* and *dura mater* in this part; no discoloration of that membrane, nor was there any such elevation of it as indicated a lodg-  
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ment of blood, serum, or matter, betwixt the *dura mater*, and the subjacent membrane: (*Pia mater*) his symptoms were not at all relieved by the operation. The day after the operation was performed, the patient died.

UPON opening the head, the cause of his death very plainly appeared. A small quantity of matter was found betwixt the *cranium* and *dura mater*; and a considerable quantity of matter and extravasated blood betwixt the *dura mater* and *pia mater*; immediately under that part of the Scull which had received the blow: the other parts of the brain and membranes were not visibly affected.

*Query.* If the operation of the trepan had, immediately after the accident, been performed upon the part injured, is it not reasonable to suppose, that the violent and unexpected effects in this case, arising from the extravasation that was formed, and confined betwixt the *cranium* and *dura mater*, and betwixt the *dura mater* and *pia mater*, would have been prevented? There seems to be no doubt of the propriety of answering this question



question in the affirmative. Again ; were not the symptoms attendant upon the accident such as indicated a necessity for the immediate performance of this operation ? It is plain from the account I have given, I did not then think so ; however, the event proved my mistake. Since then, I have pursued different methods under the like circumstances ; and upon the whole have been much more successful. At the time the operation was performed, would it not have been more advisable to have applied the instrument upon that part of the Scull where the blow was given, rather than upon the part where the pain was ? It is certain it would have been so ; and I can very truly say, I was then of that opinion ; but in a consultation it was otherwise determined ; which is the true reason why it was not done upon the place where the blow was received. The removal of the bad symptoms, the length of time the patient continued well after the disappearance of these symptoms, and the sudden return of the original symptom of vomitings, preceded by a severe rigor, are such circumstances as, I believe, will be thought uncommon. But before I conclude this chapter,

I think

I think I may with propriety draw the following inference from this example : in all injuries of the head, attended with similar circumstances, we cannot act with too great caution and circumspection ; and, I believe, it will in general be right to proceed as soon as may be to the operation of trepanning the Scull ; for it is far more adviseable to perform this operation in a dubious case, than to risque the consequences of an omission of it in a necessary one ; which doctrine may be supported by reflecting upon the following assurance, that the danger in these cases does not arise from the performance of the operation ; but entirely from the injury which the brain and its membranes have sustained, and will still continue to sustain, unless the immediate cause of that injury be removed. For farther support of this doctrine, therefore, let us attend to the history of the following case.

CASE V.

*T. H.* a young gentleman seven years old, of a delicate constitution, forcibly struck the fore-part of his head against a brick wall, in

in running away from one of his school-fellows, with whom he was at play. In three or four days after the accident, I was on this occasion desired to meet the Surgeon who attended the school, a few miles from London, where the accident happened. Upon examination, there appeared a contusion, and a slight laceration of the scalp, accompanied with a discoloration of the fore-head, and an œdematous tumor of a considerable part of the face and head. The wound was not so large as to admit of my finger; for which reason a probe was introduced, for the purpose of leading me to the discovery of the state in which the surface of the bone was. A small portion of the *os frontis* was deprived of its covering, and an inequality on the surface of that bone presented itself to the probe: upon receiving the blow the patient fell down, and was a short time deprived of his senses: at intervals he had been attacked with sickness and vomitings. When I visited him, he was in bed, and had a symptomatic fever. The patient was restless and drowsy. Hitherto nothing material had been done, but keeping the child quiet and still; the wound had been superficially dressed with an emollient ointment spread on lint, and the swelled part covered

covered with a poultice of bread and milk. I advised, that the young gentleman should be let blood at the arm ; that a clyster of the purgative kind should be administered, and that a part of the scalp should as soon as possible be removed. In a few hours after I visited him, he was conveyed in a carriage to his father's house, which was a few miles from the school. As soon as he got home, he was let blood, and a purgative clyster was injected, agreeable to my directions. The next day about noon, I saw him in company with a neighbouring Surgeon and Apothecary of eminence, when it was judged necessary to proceed immediately to the removal of a piece of the scalp : when the Scull was exposed, a groove, resembling a fissure, was discovered on the frontal bone ; for which reason, I trepan'd the Scull in such a manner, as to include this groove within the circumference of the instrument. Under the piece of bone that was removed, the *dura mater* appeared detached from the Scull, and was covered with extravasated blood ; this extravasation, with a soft sponge, dipt in warm water, was washed away. The wound was superficially dressed with dry lint,



lint, over which a pledgit spread with the *ceratum album* was applied, and kept on by a proper bandage. In a few days after the operation, the symptoms were such as required bleeding to be repeated, and the body to be kept properly open : that is, the pulse were weak and full ; and the child was hot and restless. In some days after the operation, the patient on a sudden was attacked with convulsion fits, on which account I was desired to attend with all expedition : upon finding him in this alarming situation, I advised the application of blisters to the arms, and draughts of the valerian, joined with volatiles, to be administered every six hours : this was complied with : some hours before I arrived at the patient's house, my assistant, who attended, had removed the dressings which he had applied some hours before ; and upon inspecting the part, he informed me, that the *dura mater* had appeared to him in a state of elevation and tension. For which reason, he judiciously punctured the *dura mater* with a lancet, and evacuated some lymph, which was extravasated, and lay betwixt the *dura mater* and *pia mater*. From this time the child continued to mend ; and  
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by the help of the bark, joined with the valerian, the wound was well digested: it granulated, and gradually healed till the cure was compleated.

To the timely performance of this operation, the recovery of the child may very fairly, I think, be ascribed: for had it been neglected, he probably would have shared the same fate with R. J. in the preceding case. Upon examining the bone after it was removed, there was some doubt, whether the mark on the bone was natural, or arose from the blow.

## CASE VI.

*Of a violent Concussion of the Brain, and a Contusion of the Scalp, attended with Loss of Sense, Delirium, and Rigors successfully treated.*

**T**HOUGH the following be a common observation amongst the experienced in Physic and Surgery, that when fixed and violent pains of the head, accompanied with uncertain and repeated rigors, followed by an acute fever, are the consequences of any  
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great violence done to the Scull, the brain, and its membranes, there probably already is, or shortly will be, a formation and collection of matter upon the *dura mater*, the *pia mater*, or in the substance of the brain itself; and though it must be admitted, that the truth of this observation has often been confirmed by experience (the effects of which symptoms, when they do occur, are much to be dreaded, and ought with the greatest care and expedition to be guarded against) yet there are instances which shew, that this remark is liable to exception: for it sometimes does most certainly happen, that severe and repeated convulsive shiverings, &c. do arise from a concussion of the brain, an affection of the nerves in consequence of this commotion, and an inflammation and tension of the membranes of the brain, without producing any visible appearance of a suppuration, or even an extravasation of blood or lymph within the Scull. An instance of such a case has lately occurred to my experience, which on account of its singularity, and the utility this observation may possibly be of to the younger practitioner, I have here given an account of.

S. W.

*S. W.* 39 years of age, on the sixteenth of *June*, of this present year 1759, applied to me for relief, on account of a violent blow which she had received on the superior and anterior part of the left parietal bone, by falling down two pair of stairs with a pail of water in her hand. She remained senseless upon the ground for some minutes after the accident, before any one came to her assistance.

Soon after the recovery of her senses, she was seized with retchings to vomit; this symptom returned two or three times every day till she made application to me (which was sixteen days after the accident.) During this time she was likewise afflicted with excessive pain in the head, and a dimness of sight, accompanied with severe rigors, which were followed with an acute fever: these last symptoms returned several times a day, but at uncertain periods, each paroxysm continuing a considerable time.

SHE had no appetite from the day of the accident, nor could she get any rest. At intervals she was delirious. She informed me, that about four days before I saw her, a small discharge of bloody foetid mucus had issued from her left nostril; the day after this

discharge, she imagined her head was in some degree relieved ; but the pain soon returned with great violence, and continued, with the other symptoms, till she was trepanned. About a week after the accident, she lost ten ounces of blood from the arm ; this she said was the only method that had been taken for her relief, till she applied to me.

UPON examining the head, I readily discovered a contusion upon that part of the scalp where she had received the blow, with the remaining marks of a small superficial wound of the Integuments.

UPON pressure, she complained much of the part that was contused. The very morning of the day I saw her, she was attacked with so severe a shivering, as put her whole body into an extraordinary agitation (as I was informed by the nurse and several others that were present, and were witnesses of it.)

FOR these several reasons I caused her head to be immediately shaved, and afterwards I proceeded to the operation of the trepan, which was performed upon the left parietal bone, after having removed a piece of the scalp of a circular form, and that somewhat larger than a crown-piece.

UPON



UPON taking out the circular bit of bone, the *dura mater* appeared tense and elevated ; (but was very slightly if at all discoloured) at first this gave me reason to suspect there was an extravasation underneath this membrane : but upon gently pressing the *dura mater* with my finger, it readily subsided, and did not rise up again : for which reason I thought an incision through it was not only unnecessary, but improper : the wound was dressed with dry lint, (which alone is generally sufficient for stopping the bleeding of the vessels of the scalp, &c.) and the patient was blooded in the arm to the quantity of ten ounces.

THERE was no extravasation at all upon the *dura mater*.

AFTER the performance of the operation of the trepan, the patient had no return of her rigors, retchings to vomit, or any other of her bad symptoms ; except that she now and then complained of slight tremors.

DURING the cure of her wound, stools were occasionally procured by clysters, and she was for several weeks kept upon a very abstemious diet.



IN consequence of this treatment, she complained of a great dejection of spirits, attended with a low and languid pulse ; but by the assistance of volatile cordial medicines, and the application of a blyster to the neck, with an allowance of more nourishing diet than she had hitherto been permitted to take since the operation, these symptoms were gradually removed.

THERE was nothing else worth communicating that occurred during the cure, except it may be thought worthy of observation, that as the *dura mater* was very slightly bruised or discoloured, there was no separation of its external *lamina* ; but the exfoliation from the exposed bone was considerable in size and thickness.

*Query.* In the preceding case of *S. W.* p. 35, could the operation of the trepan be said to be absolutely necessary, as there was no extravasation of blood, nor any suppuration found within the Scull ? Again ; is it not probable, that the scalping of the patient without applying the trepan would have been sufficient to have removed the affection of the membranes of the brain, the brain itself, and  
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its nerves? It is possible it might have been so; and had I been applied to upon this occasion, when the accident first happened, I should only have removed the diseased scalp with the *pericranium*, and have largely evacuated by bleedings, clysters and purges, which possibly might have succeeded. But as the accident had been of sixteen days standing, and the symptoms then continued with great violence, I think there could be no doubt of the propriety of applying the trepan; and this is more strongly to be recommended under similar circumstances, when we consider that the danger is not in the operation, but in the disease.

## CASE VII.

*Of a Depression and Fracture of the Os Frontis, successfully treated.*

*J.* C. five years old in the middle of November, 1759, was kicked by a horse on the forehead, about an inch above the external angle of the right orbit; he was brought into the hospital immediately after the accident,

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with a laceration of the scalp, and an evident depression of a part of the frontal bone ; which upon the introduction of a probe through the external wound of the integuments, very evidently appeared to be complicated with a fracture. The boy was drousy (*comatose*) and senseless, but had no other symptom attending the accident. Upon a removal of the injured scalp, I was enabled to trepan the patient ; which was done by applying the instrument in such a manner as to take in a part of the fractured and depressed bone. The boy was relieved from this instant.

THE wound was loosely covered with dry lint ; upon which was applied a soft pledgit of tow, spread with *ceratum album*. The patient was put to bed, lost six ounces of blood from the arm, and was kept strictly upon a very sparing and liquid diet ; by means of this management, he went successfully on without any alarming symptoms till his cure was compleated : which was effected in about six weeks. During the cure of this, and the preceding patient, there was not the least troublesome fungus from the wound. In both these cases there was an exfoliation of a part of the exposed surface of the *cranium* ;  
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and in the first case, an exfoliation not only happened to the surface of the exposed Scull, but there was a circular exfoliation formed quite through both tables of the circumference of that opening which was first made through the Scull; and there was likewise a separation of the external *lamina* of the *dura mater* from its internal *lamina*.

## REMARK.

It is necessary to recollect, that I did not incise the *dura mater* in either of these instances: which from much experience I am perfectly convinced, should never be done but in cases of absolute necessity: for though I very well know, this process of the operation will give little or no pain when executed with a sharp instrument; I am nevertheless satisfied, that when the *dura mater* is left entire, the frequent inconveniences of a large fungus, and a part of the brain itself, pushing out of the Scull through the opening made in the bone, will not only be prevented, but the danger arising from the exposure of the *pia mater*, and brain itself, to the inclemency of the air (especially in cold weather) at the  
times



times of dressing, will be happily avoided : for though it is certain, that considerable injuries of the brain are sometimes known to admit of a cure, yet the instances are few when compared with the numbers that miscarry under the like circumstances ; therefore we cannot with propriety make use of these arguments as a reason for running our patients into those risques which may so easily be avoided, by pursuing a different and more safe method of treatment. When the case is so circumstanced as to render the wounding the *dura mater* necessary, it should be done by making a single incision through that membrane with the point of a lancet ; which opening will be found large enough to give vent to any extravasation that is formed and deposited underneath the *dura mater* ; and in general, will be found sufficiently large too to admit of the easy extraction of a small piece of bone, or any other extraneous body that may happen to be forced into the brain ; but if in the latter case, a single incision should not be found sufficient for that purpose, a second must be made : so that the form of a cross may be described by the two incisions.

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THE only circumstances, in my opinion, under which an incision through the *dura mater* is adviseable, are these : first, in case of a laceration of this membrane, it will be right to enlarge the wound, to take off the present tension it labours under, and to prevent an encrease of the inflammation of that part : secondly, it will be adviseable to incise the *dura mater*, supposing it to be elevated by any subjacent fluid deposited betwixt that membrane and the *pia mater*, to give issue to the extravasation ; and thirdly, it will be right to divide the *dura mater*, to extract any foreign body that is forcibly driven through it into the brain. The ancients were very careful in preventing injuries from happening to this membrane, and it must be allowed too with very good reason, if we consider its situation, as well as the several material purposes for which the Author of Nature has probably designed it. It will be generally adviseable, for the patient to wear something upon his head for some time after the wound is healed, to defend the part from external accidents ; for I believe it seldom happens, that the part from whence the piece, or pieces of Scull have been removed by the operation,

operation, or otherwise, becomes so supplied with callus, as effectually to defend the brain and its membranes from the bad consequences of such an accidental blow, or rude pressure, as may possibly happen; I mean till some time after the wound is healed: when the parts have acquired a sufficient degree of firmness, such a defenſitive then becomes unnecessary.

## C A S E   V I I I.

*Of a fractured Skull, with a Wound of the Brain and a Paralysis of the left Side, which, after a variety of Incidents, terminated in Death on the twenty-eighth Day after the first Operation.*

*J.* *W.* aged 14 years, was recommended to my care in the beginning of November 1756, with a palsy of her left side: I was informed by the parent of the girl, that about ten days before she applied to me, she had received a blow upon her head with a pointed instrument, which was almost immediately succeeded by this symptom (*hemiplegia*;) upon examination I discovered a  
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very small lacerated wound of the scalp; its situation was so near to the conjunction of the sagittal with the coronal suture, that I was apprehensive of its being circumstanced like that of R. 7. p. 10. already described: the wound of the scalp was large enough to admit of the end of a probe; with which I discovered a ragged orifice that penetrated quite through the Skull: this determined me to proceed immediately to the scalping of the patient. Upon a removal of the scalp, I observed a small portion of the cortical part of the brain pushing outwards above the external surface of the parietal bone, occasioned by the bit of bone that had forcibly been beaten inwards. After the scalp was removed, I proceeded to the farther processes of the operation: when I had sawed through the outer table of the *cranium*, I proceeded with caution till the bone became quite loose; when it was loose, I removed it with the forceps: the piece of bone that was forced into the substance of the brain, appeared so firmly fixed in this situation, as not easily to admit of extraction; for which reason I dilated the wound of the *dura mater* with the point of a lancet: this rendered the extraction

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of the bone easy. After the operation was finished, the part was dressed in a superficial manner with dry lint, covered with a soft pledgit of tow, spread with white cerate. These applications were kept on with a double headed roller. In twenty-four hours after the operation, the use of the patient's right side began to return, and in four days after she perfectly recovered of the palsy. From this time, she continued in a very promising way till the end of the sixteenth day, when the paralysis returned; she then complained of considerable pain a little below the part where the operation had been performed; upon pressure the pain encreased; for these reasons, as well as on account of the discharge being considerable in quantity, I proceeded to the performance of a second operation, about an inch and half below the edge of the former wound. After the piece of bone was removed, I examined whether there was any lodgement of blood or matter betwixt the intenal surface of the Scull, and the *dura mater*; but as there was no such appearance, I divided the *dura mater* with the point of a lancet, upon a supposition that there might possibly be something of that kind



kind under this membrane ; or if there was no extravasation, I judged that a more ready issue would by these means be allowed of to the imposthumation : but no discharge followed this incision ; however, the patient was considerably eased by the second operation, and continued so for two or three days, when she relapsed into her former pain ; the pain remained with very little alteration till the twenty-fourth day after the first operation ; on that day she was seized with a *diarrhœa*, attended with delirium, and in four days after this attack she expired. A few days before her death, the discharge became extremely fœtid ; it appeared black ; and gradually diminished.

I WAS not permitted to inspect the brain after her decease, which I should have been glad of doing, that this account might have been rendered more complete.

N. B. During the course of my attendance upon this patient, I observed that a considerable fungus, or rather, that a part of the brain had protruded through the first opening that was made in the Scull : this prominence continued till the performance of the  
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second operation; soon after which, it totally subsided at the place where the first operation was performed, and appeared in as great a degree at the second opening that was made through the Scull, which continued till the patient's death.

## C A S E   I X.

*Of a Fracture of the left Parietal Bone of the Scull, attended with a Separation of the Coronal Suture, and a slight Depression of the Os Frontis, successfully treated.*

ON the first of November, 1757, M. F. aged fifty-three years, being engaged in his usual business at a sugar ware-house, and immediately assisting in conveying an hog-head of sugar, by means of ropes and pulleys, into an upper loft, the ropes accidentally gave way; the cask fell down, and struck the poor man on the upper and fore-part of his head: he immediately dropped down, deprived of all sense and motion. Upon his admission into the hospital, which was in a few hours after the accident, the state of the case appeared as is hereafter related,

lated. The scalp was considerably contused and lacerated; the anterior and lateral part of the left parietal bone appeared to be broken, but without any visible depression of it: the fracture extended to the sagittal, just above its junction with the coronal suture: seeing this, a large piece of the scalp was removed by incision; and the bone being carefully divested of its immediate covering, (the *pericranium*) the operation of the trepan was performed upon the fractured part, which being finished, gave issue to a small quantity of extravasated blood that lay upon the *dura mater*: immediately after the operation the patient was removed to bed, and sixteen ounces of blood were taken from his arm. In a few hours afterwards the patient recovered his senses, and continued tolerably well till the third day following, when he began to complain of considerable pain in the fore-part of his head; of a dimness in his sight; and at the same time he observed, that objects appeared multiplied to him: his pulse was quick and full; and by pressing upon the right and superior part of the scalp, near the edges of the wound, the violence of the symptoms was increased.

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This I considered as a sufficient reason for the removal of a greater part of the scalp than had hitherto been done ; in consequence of which I was enabled to discover the source of his complaints, which arose from a separation of the coronal suture, and a slight depression of the upper part of the frontal bone at its connection with the right parietal bone : to remove these symptoms, I applied the trepan, so as to secure the depressed part of the *os frontis* within the compass of the crown of the saw ; by these means I necessarily included a small portion of the sagittal suture, and of the coronal suture. Upon a removal of the piece of bone, I discovered a small quantity of coagulated blood lying loosely upon the *dura mater* : which being washed away with a soft sponge dipt in warm water, I covered the wound with dossils of dry lint, and put the patient to bed. In a very few hours after the operation, his complaints were greatly abated ; and from this time he continued to mend till the finishing of his cure ; which was in about ten weeks after the performance of the first operation. During the course of his illness, he was occasionally let blood ; purgative clysters were administered ;

ministered; and he was very strictly confined to the most innocent diet for near six weeks: such as thin milk-pottage, panado, barley-water, and sago: at the end of that time, I sparingly allowed such solids as were of the innocent kind, to wit, puddings, chicken, boiled veal and mutton.

## C A S E X.

*Of a Depression of the Os Frontis and Concussion of the Brain, in which the Operation of the Trepan was successfully applied.*

G. S. a young Gentleman betwixt 6 and 7 Years of age, in July 1758, accidentally fell from a horse, and pitched upon the upper part of the forehead; he was taken up and carried home in a senseless condition. I was called to his assistance in less than an hour after the accident had befallen him. I found him in a deep sleep, attended with loud snortings, just as though he had been in a fit of apoplexy. By pressing upon the fore part of the head, the integuments on the right side felt very loose and flabby, and the impression of my fingers remained for some time; there was no laceration of the scalp, but it was not

difficult to perceive there was a depression of the Scull. I advised the immediate application of the trepan ; the parents consented, and the operation was accordingly performed upon the depressed bone. Betwixt the *cranium* and *dura mater* there was a small quantity of extravasated blood, which I wiped away with a sponge ; the wound was dressed superficially with dry lint ; and the boy was immediately let blood to seven ounces from the arm ; soon after this treatment he gradually recovered, and on the next day was perfectly restored to his senses ; there were no difficulties attended the cure, but such as were removed by one or two occasional bleedings and laxative clysters. The *dura mater* was not so affected as to render it adviseable to divide it, nor was there any sprouting fungus from the wound during the process of the cure, that was at all troublesome. A piece of the scalp, the size of a crown-piece, was cut away to admit of a free use of the trepan, and almost as much of the surface of the Scull was deprived of the *pericranium* ; there was not the least exfoliation of the bone, or of any part of the *dura mater*. In six weeks the wound was quite healed, and the boy has been exceedingly well ever since.



C H A P. \*III.

*Of the Operation of the Trepan.*

THE manner of performing the operation is this : the patient being seated upright in his bed, on a stool, table, or chair of a convenient height, and properly secured by two or three assistants, so that his head, arms, legs, and body may be kept as steady as possible, the Surgeon with a round edged knife (such as is made use of in cutting for the stone, and on many other occasions) must make a circular incision, at least as large as a crown-piece, through the scalp: which is to be dissected up from the subjacent bone: when the scalp is removed, which can seldom be so effectually done as to clear away the tendinous expansion of the *occipito frontalis* muscle, and the *pericranium* at the same time; the Surgeon must proceed to a farther removal of these parts, till the bone becomes quite bare : this being effected, he must apply the perforator to the *cranium*, and bore a hole sufficiently deep for the point of that pin which is fixed in the center of the circular

saw ; the use of which pin is to keep the  
 trepanning instrument steady, till the teeth  
 of it have made themselves a groove suf-  
 ficiently deep for preserving it in a proper  
 direction, during the farther execution of  
 this process of the operation ; when the  
 central pin must be taken away, that the  
 membranes and brain may not be wounded in  
 consequence of its projection : the instrument  
 must now with care be moved equally on  
 every side in a circular manner, till we arrive  
 at the *diploe*, which is a cellular body,  
 containing a greater or lesser quantity of  
 bloody marrow according to the patient's  
 age, and is situated betwixt the two tables of  
 the Scull : this *diploe*, or *meditullium*, has  
 never once been wanting, (as I have yet  
 observed) in the many operations I have  
 performed in living or dead subjects ; but in  
 dried Sculls of old people, I have now and  
 then observed it to be quite obliterated in  
 some parts of the parietal and frontal bones,  
 though seldom in spaces so large as to equal  
 the size of the crown of the trepanning  
 instrument. When we arrive at the *diploe*, it  
 is necessary to proceed with great caution, lest  
 we inadvertently wound the *dura mater* with  
 the

the teeth of the saw : upon a removal of the piece of bone (which sometimes happens by its sticking in the cavity of the instrument, and is at other times necessary to be done with a pair of forceps,) we are to proceed to the elevation of the Skull in case of a depression of it : after having first made smooth the circumference of the bone with the lenticular, if necessary : the raising up of the depressed part of the bone may conveniently be done by one of the extremities of the handle of the trepanning instrument, being carefully introduced betwixt the depressed part of the *cranium* and the *dura mater*, at the same time observing to exert such a degree of force with the elevator as is capable of raising the depression so effectually, as to render the external surface of the Skull uniformly even. If a single operation is insufficient to effect this (as I have often known it to be) a second or third must be performed, that the Surgeon may be enabled to raise up every part of the depressed bone ; which rule must strictly be observed ; otherwise the operation cannot be expected to be attended with success ; as the bad effects of an oppressed brain must in part remain. The place where the instrument

should be applied must be upon that part of the Scull which will admit of the use of the elevator to the greatest advantage. During the use of the saw, the bony particles must be removed by blowing on the part, afterwards making use of a small pencil brush to sweep away more effectually that which remains behind in the bottom of the groove : or if necessary he may employ the point of a tooth-pick for this purpose. The teeth of the saw are to be cleansed by a small brush (which is to be met with in every case of instruments designed for this operation) or by wiping them with a cloth : if the injury of the Scull be a fracture with depression, the instrument must be fixed upon the firm part of the bone on one side of the part broken, so as to include the fracture, and a small part of the depressed bone within its circle ; but if the fracture be not complicated with a depression of the bone, the center of the instrument must be applied as near as may be to the crack ; because in the first instance, the depressed bone being moveable, on account of its separation from the neighbouring immoveable part of the Scull, is incapable of supporting the pressure that is necessary to be made upon the part  
with



with the instrument in the performance of this operation ; in consequence of which, the membranes and brain itself must be in danger of suffering considerably before the operation can be finished, if that method is not followed. But this can by no means be the case in the second instance where the parts of the bone remain fixed, and upon an equality with one another. It may be observed, that I have directed a piece of the scalp, as big as a crown-piece, to be cut away, previously to the use of the trepanning saw ; but in some instances it will be found necessary to differ from this rule, and to take away a piece of the scalp at least three times as large, since fractures are sometimes found to extend quite cross the Skull, even from one temporal bone to the other ; an instance of which I was sometime since consulted in, where both the parietal bones, one of the temporal bones, and the *os frontis* were considerably broken ; in this case I trepanned the patient in two places, and took away a large piece of bone besides : which being separated from its neighbouring parts, lay loose, and pressed upon the *dura mater*. This was by much the most general fracture of the Skull



Scull I ever saw ; and I must acknowledge (from the great degree of pressure which the membranes and brain had suffered, as well as from the state of stupidity I found the patient in) I had very little hopes of his recovery ; but he nevertheless did well, and has ever since enjoyed his perfect senses. It is now several years since this operation was performed. The manner of treating the wound or wounds, immediately after the operation of the trepan, must first be by stopping the *hæmorrhage*; this may in general be done without tying the vessels ; the next thing to be done is to wipe clean the surface of the *dura mater* with a bit of soft sponge dipt in warm water, or with a piece of lint secured upon the end of a probe, and dipt in warm oil; after this, dry lint is to be laid loosely upon the whole surface of the wound. The lint may be covered with a pledgit of tow spread with *ceratum album*, or any other cooling ointment that has neither turpentine nor resin in it ; which ingredients very often prove too stimulating to the skin when long continued, and occasion troublesome itchings, attended with inflammation. The first applications should not be removed till three days after the operation,

ration ; unless the discharge from the wound be so great as to make it necessary to do so ; or the patient should complain of any uneasiness arising from the smell or stiffness of the dressings. This method of treating the wound should be continued during the whole progress of the cure, so far as relates to the *dura mater* ; unless that membrane has been contused, or it has been found necessary to divide it ; under which circumstances it should be dressed with such applications as are gently deterfive and moderately stimulating, till a separation of the loose and contused part be formed ; such for instance as the honey of roses alone made warm, in which dossils of lint must be dipt and applied to the surface of the *dura mater*, or with the addition of an eighth part of brandy, or tincture of myrrh, added to the honey of roses. These dressings are necessary when the discharge is fœtid, and the membrane looks loose and discoloured ; and they must be continued till the parts are quite clean, and granulations begin to appear : when the use of dry lint is to be preferred to all other applications ; at the same time observing to keep a moderate pressure upon the part, to prevent, if possible, a luxuri-

a luxuriancy of flesh ; but if these methods should be found unequal to the task, and the fungus shoots up a considerable height above the surface of the Scull, it must be removed by the knife rather than by ligature, especially if escharoticks, assisted by strict compress and bandage, have been ineffectually tried. Every time the patient is dressed, the wound should be exposed as little as may be to the air: particularly in cold weather. The frequency of dressing the wound must depend upon the quantity of the discharge ; but in general once in twenty-four hours will be found sufficient. As to fomentations, emollient ones may be used for the first ten days or fortnight; after that, a soft sponge dipt in hot water, and used in such a manner as to cleanse the wound, will generally be sufficient for the purpose. I have taken notice, that it is sometimes necessary to divide the *dura mater* with a lancet: but for the propriety of this part of the operation, I refer to the remarks upon the cases of *J. C.* p. 39, and *M. F.* p. 48, as well as for the general treatment of the patient, so far as relates to evacuations and diet ; but it is necessary to observe, that during the progress of the cure,

it

it will sometimes be found adviseable to give cordial medicines, and to apply blisters, when the patient is too much reduced by evacuations and a thin spare diet.

## C A S E XI.

*Case of a general Concussion of the Brain, which happened four Weeks before the Patient was presented for Admission into Guy's Hospital; and which Accident terminated in Death, after a Variety of Incidents,*

**E**ARLY in the morning, of the last day of January, in the year 1770, N. T. a young man 20 years of age, received a blow from a large iron-pin : by which means the back-part of his head was forcibly driven against a piece of timber. In consequence of the accident, the patient fell down : and for some hours afterwards was deprived of his intellects : however, without any assistance, he at length so perfectly recovered himself, as to be enabled to find his way home. From the time his senses were retrieved ; till night, his complaints were trifling ; but by the next day, he was seized with

with convulsion fits. For a fortnight these fits, with short intervals, were continued. His sight, his speech, and his memory were very imperfect. His right side was *paralytic* (*hemiplegia*.)

FOUR weeks after the accident, this young man was admitted into *Guy's Hospital* : which was the first time I had an opportunity of seeing him : the whole therefore of the preceding history was derived from the mother of the youth : by the mother I was farther informed, that the day succeeding the accident, this young man was visited by his brother, by profession a Surgeon and Apothecary. The patient it seems had been let blood : a blister had been applied betwixt his shoulders, and his body had been properly kept open. Some medicines too of the *febrifuge* kind had been administered.

UPON examining into the circumstances of the case, at the time he was put under my care ; his right side, I saw, was *paralytic* : he was incapable of speaking : his complexion was pale and fallow : and he was frequently and involuntarily spitting upon the bed-cloaths ; in short, he had the appearance and actions of an idiot. No injury of  
the



the scalp was I capable of discovering, nor any local injury that warranted my procedure to an operation upon the head. However, that no reasonable endeavours might be omitted, which I thought were likely to afford relief to this unhappy fellow, his head was shaved, and afterwards blistered : costiveness was obviated, and various medicines of the nervous and antispasmodic kind, together with volatiles, at proper intervals, were administered. This treatment was succeeded by the following consequences : in about fourteen or fifteen days, the patient began gradually to recover, and at length was restored to his senses, to his eye-sight, and to the use of his limbs, in so perfect a manner, as with a little assistance to enable him to walk about.

THIS agreeable change continued for a week only.

AT the end of a week a *stupor* and *coma* came on ; these symptoms were followed by a loss of speech, and an incontinence of urine.

FROM the beginning of my attendance the pulse was regular, but rather slow and low. Finally, repeated rigors ensued.

BLYSTERS

BLYSTERS were then applied to the internal parts of both arms ; and soon after, stimulating *cataplasms* were applied to the feet. Medicines too of the nervous, volatile and antispasmodic kind, were at stated intervals administered.

THE stomach retained whatever it received ; but the rigors returned with very little abatement. Ten weeks from the day of the accident were elapsed before the patient died.

AFTER death, application was made to the friends of the deceased, for permission to inspect the brain ; but that was not complied with.

### OBSERVATION.

FROM what has been above related, it will not be unreasonable to suppose, that previously to the death of the young man, an abscess of the substance of the brain had most probably taken place ; and that no operation upon the head, however judiciously performed, could with any degree of probability have proved successful.

CASE

C A S E XII.

*Case of a Concussion of the Brain, attended with uncommon Symptoms, successfully treated.*

THE following, I think, is one of the most remarkable cases of the kind in Surgery that I can recollect: possibly therefore it may be esteemed worthy of some attention: by those at least, who are less experienced in this profession; and whose engagements do not admit of their seeing such a variety of accidents of a similar kind, as a general practice, during the course of very many years, has given me repeated opportunities of paying a necessary attention to.

J. W. a gentleman aged about 40 years, was thrown from his horse, and pitched upon his head on the ground. This accident happened at a considerable distance from London, so that I did not visit the patient until many hours were elapsed after the fall. As soon as I arrived at the house where the patient lay, I carefully examined the head; the in-  
F jured

jured part of the scalp was soon discovered ; for on the inferior, and lateral part of the right side of the head, the integuments appeared to be much contused, flabby, and discoloured : upon pressure, the patient winched and groaned exceedingly. These were sufficient reasons to induce me to advise the immediate scalping of the *cranium* ; which being submitted to, was accordingly put in execution. When the surface of the Scull was by these means properly exposed to the sight, and to the touch ; there remained little or no difficulty to determine whether or no there was a fracture, or a fissure of the subjacent bone. Since neither the one, nor the other of these appearances could be discovered ; in consultation, it was judged adviseable to trust for the present to evacuations by copious bleedings at the arm : by administering laxative clysters ; by opening infusions ; and by giving cooling medicines of the *saline* and *febrifuge* kind. These methods having proved unequal to the purpose, blisters were applied to various parts, together with stimulating *cataplasms* to the feet : at the same time medicines of the nervous and antispasmodic kind,

were

were administered at proper intervals: notwithstanding all that had been done, the patient continued in a convulsed and insensible state for three weeks: at the expiration of that period, his speech and intellects gradually returned; and in some time afterwards, he was so well recovered as to be enabled to go abroad.

THE symptoms to which I have alluded in the title to this chapter, were a giddiness and an uncomfortable sensation in the head, accompanied with deafness: as these complaints rather encreased than decreased, I recommended a small perforation to be made through a part of the Scull, which still remained bare and discoloured: this proposal being readily assented to, I applied the perforator. This instrument was carefully directed through both tables of the Scull. Upon with-drawing the instrument, a considerable quantity of yellow serum was discharged, through the orifice. As the opening through the bone was small, and that there might not be any future impediment to my friend's enjoyment of his natural ease and comfort, I repeated the operation a second and a third time before I left



him. My most sanguine expectations were perfectly answered from what had been done : every symptom having been so effectually, and so speedily removed, as to leave no vestige of his late complaints. These operations were not at all painful ; no part being concerned but the bone itself. Many years are now elapsed since this accident happened, and the patient continues to enjoy a perfectly good state of health.

## R E M A R K.

HAD this patient been trepanned soon after the accident, such symptoms as many weeks afterwards led me to the making the three perforations through the Scull could not have occurred ; because the vessels which attach the *dura mater* to the Scull, and which were undoubtedly ruptured in consequence of the fall, must have discharged their contents outwardly : for this reason therefore, no subsequent affections proceeding from a pressure made upon the *dura mater* ; the *arachnoides* and *pia mater* ; the *cerebrum* itself, or upon the *portio mollis* of the *auditory nerve*  
on

on that side of the head, could have happened from this cause.

IN the course of this year 1783, I was called to a young man ; at the distance of 13 or 14 miles from London, whose case appeared to me to be very similar to that I have so lately described. I advised the scalping of the head without delay, and that the trepan should afterwards be applied to the subjacent bone, though no fracture or fissure was discoverable. My advice was complied with : the operation was performed on the spot, and the young man gradually recovered with proper care and attention.

It may be worth observing, that in the case of *T.H.* to which, permit me to refer my readers; the extravasation was pointed out as being situated betwixt two of the membranes of the brain; to wit, *dura mater* and *arachnoides* : but in the case of *J. W.* the extravasated *fluid* was more superficially deposited; to wit, betwixt the internal surface of the inferior and lateral parts of the right parietal bone, and the external surface of the *dura mater* ; which circumstance rendered it unnecessary to do more than to perforate the *cranium* through both its tables, for the purpose of evacuating that

*fluid*, which was found to be productive of such mischief, as finally to render this undertaking indispensable. The perforations were made upon the most depending part of the diseased bone ; and at a small distance from each other. Before the wound could admit of being cicatrized ; a previous exfoliation of the external *lamella* of the exposed bone was necessary : this must always be expected under the like circumstances ; be it a part of the *cranium*, or of any other bone of the body.

## C A S E   X I I I .

*A remarkable Case of an extensive Fracture of the Scull, successfully treated ; and where it was found necessary to apply the Trepan, three Times on the same Day.*

**L.** B. about 50 years of age, the servant of a merchant in the city of London, had the misfortune to fall from a ladder, and to pitch upon his head ; by which accident he lost his senses. For a week afterwards, the poor man was attended by the family Surgeon,

geon, who made use of such methods for the relief of his patient, as are generally prescribed in similar cases, so far as relates to evacuations, and to superficial applications to the part injured ; but all this proved to avail but little.

UNDER these circumstances, he was admitted into *Guy's Hospital*. Upon examining the head, the scalp appeared to be much contused ; the contusion was very general, for the whole of the anterior part of the coverings of the *cranium* were œdematous, elevated, and discoloured : upon pressure, the pain was grievous ; and to the touch, it was evident that the scalp was detached from the Scull. The removal of the diseased integuments became now quite necessary ; this was accordingly done : the incisions being made from the *squamous suture* of one side of the *cranium*, to the *squamous suture* on the opposite side.

By these means the surface of the bone was sufficiently exposed : it was now no longer a doubt, that there was an extensive fracture of the anterior parts of both parietal bones, accompanied by a partial separation of these bones from the posterior parts of the



frontal bone, complicated with a considerable depression of the anterior parts of the parietal bones : so that the fore-parts of these bones lay under the posterior parts of the frontal bone ; where this bone, and the parietal bones are connected by the *futura coronalis*.

To remove the depressed bones from their unnatural situation : to disencumber the *dura mater* from the præternatural pressure, which this membrane sustained from the incumbent bones ; and to wipe away the extravasated blood, occasioned by the ruptured vessels ; was the business to be then thought of, and to be put immediately into execution. To effect these purposes, one operation proved insufficient ; and a second operation was not adequate to the intention : a third operation therefore was put in practice. The three operations so perfectly answered my expectations, as enabled me gradually to restore this unfortunate man to his perfect senses ; and to his former good state of health.

THE operation of trepanning the Scull, were performed in such a manner, as to include a portion of the *coronal future* within the circle of the instrument : so that three  
portions



portions of the frontal and parietal bones, were removed by these means.

THE natural attachment of the *dura mater* to the internal surface of the Scull was broken off by the violence of the accident: for this reason, therefore, no embarrassment of consequence occurred at the time of operating, as the experiments proved.

## C H A P. III.

*Of the Cataract.*

**T**HAT disease of the globe of the eye, distinguished from other diseases of this part by the term *cataract*, is sufficiently known to the experienced in Surgery to be an affection of the *chrystalline* humour of the eye.

WHEN this defect is arrived at its utmost period, it is accompanied with such an opacity of the convex lens, as totally obstructs the rays of light in their passage; and consequently prevents them from producing such effects upon the bottom of the eye, as are brought about in a transparent or undiseased state of it: provided the *retina* and vitreous humour are perfect; and the *cataract* is not complicated with any other affection of the eye. But though the *chrystalline* in this diseased state be impervious to the rays of light, it must be remembered, that some of these rays fall obliquely betwixt the *iris* and *cataract*, and the eye by these means distinguishes light; and glaring colours. To have a competent knowledge

knowledge of this disease ; and to be enabled to distinguish it from any other disease of the eye, it is previously necessary to be thoroughly acquainted with the situation of the *chryſtalline* humour ; with the changes this humour naturally undergoes in ſome ſubjects at different times of life ; and likewise to know, that when the *cataraſt* is complicated with any of the following circumſtances ; to wit, a conſiderable change of the ſhape of the globe of the eye ; a thickneſs and cloudineſs of the *cornea* ; an inſenſibility of the expanded optic nerve (termed *retina*) it is abſolutely wrong to attempt the operation of couching. It is likewise neceſſary to be aſſured that the ſucceſs of this operation, (which at beſt is precarious) is much more ſo when there is an adheſion of any part of the diſeaſed *chryſtalline* to the *tunica iris* ; in this diſorder it is not only proper to be acquainted with the manner of performing the operation, but to be enabled to diſtinguiſh whether the caſe be not attended with ſuch circumſtances as may render the ſucceſs of it more than uſually uncertain ; if not abſolutely improper to be performed. To diſcriminate whether the globe of the eye be,  
or

or be not changed from its natural size and shape, is not at all difficult, by comparing it with a sound eye; or by merely reflecting upon the natural form of the eye. If the *cornea* and *conjunctiva* be thickened, that circumstance may be readily known, by remembering that these are the anterior coats of the eye, and therefore cannot easily be mistaken for the *cataract*; which is an opacity of the internal part of the globe of the eye; whose situation is opposite to, and a little away beyond the pupil; by looking through which, the disease will discover itself by the *chrystalline* being changed into a cream colour, a pearl colour, or a darkish grey, &c.

IF there be such a defect in the expansion of the optic nerve as renders it insensible; and that disease be not accompanied with any other disease of the eye; the pupil will not be affected by the most powerful light; the eye will be perfectly transparent; the pupil will in general be dilated; and in most instances there will be no motion at all of the fibres of the iris: at least the motion of the pupil will be so small as to be distinguished with difficulty.

FROM comparing these several circumstances with those relating to the *cataract*, it will be easy to understand the difference betwixt the few diseases

diseases of the eye I have here taken notice of. However, I am convinced, the best method that can be taken to inform those who have but a superficial idea of the structure and diseases of the eye, is to exhibit three eyes; the first with a thickness and opacity of the *cornea*; the second with a *gutta serena*; the third with a *cataraēt*; which I have often done for the information of those of the profession, whose education have not entitled them to acquire a sufficient knowledge of these diseases; by these means they have received more immediate and permanent instructions than they otherwise could have acquired.

To explain what is meant by an adhesion of the *cataraēt* to the iris, and to convey such an idea of this phænomenon to those who have not acquired a previous knowledge of the parts, I am apprized is a task that is attended with some difficulty; because it is first of all necessary to know, that in the natural state of the eye, the *chrystalline* lens is at a small distance from the iris, and by such means forms the posterior chamber of the eye: however, I may venture to pronounce, that under these circumstances of the disease, the *chrystalline* lens is either moved forwards, or the iris is moved back-

wards



wards to produce this effect; and that if there be a complete adhesion of these two parts, the original space betwixt the anterior part of the *crystalline* humour, and posterior part of the iris, becomes lost; the action of the pupil ceases; and the rays of light are rendered incapable of being transmitted beyond the iris and *cataract*; on which account there remains no degree of sight in the eye; so that the state of the *retina*, and vitreous humour consequently cannot be judged of: these are sufficient reasons for forbidding the operation of couching.

IF it be urged, that under such circumstances it may be adviseable to perform the operation of dividing the iris above, or below the *cataract*; I answer, that the same objections are to be made to this attempt. In short, to speak plainly, and fairly; however ingenious that operation of dividing the iris may be thought (in case of an absolute contraction of the pupil, or of a perfect adhesion of the *cataract* to the iris) which operation was invented and recommended by the late Mr. *Chefelden*; I must confess, that I never yet saw a single instance of success from it; and therefore cannot recommend

recommend it as an adviseable operation under any circumstance whatsoever.

IF the adhesion of the *cataraët* to the iris be partial, and the *retina* perfect; there will be a sufficient quantity of the rays of light transmitted obliquely betwixt the iris and *cataraët* to the lateral parts of the *retina*, to enable the patient to distinguish light; and sometimes too, such bodies as are white or red. Under these circumstances of the disease, the operation becomes adviseable in expectation of affording that relief to the blind, which by any other means they have very little chance of attaining to; the reasonable expectation of which may be learned from the following history. But before I proceed to relate the case I must observe, that if one eye only be affected with a *cataraët*, and the other eye be perfectly sound; or in a considerable degree useful; the operation should never be undertaken; even supposing the disease to be of the most favourable kind; for let the success of the operation be ever so happy, the eye, from which the *chrystalline* lens is removed, cannot be restored to a degree of perfection equal to that of the sound eye, without the assistance of a convex glass.

## C A S E XIV.

*A short Account of some extraordinary Faëts attending the Operation of Couching, &c.*

*W.* L. aged 26, about nine years ago was suddenly attacked with a dimness in his eyes; the disorder continued for three years in much the same state; when it began to increase, and continued so to do till he became incapable of distinguishing objects. He remained under these circumstances till *March 1748*: when he came to *London*, and put himself under my care.

THE disease was a *cataraë*, or opakeness in both the *chrystalline* humours; the *cataraë* in the right eye appeared to adhere to the inferior part of the iris; but without any defect or alteration in the shape of the pupil. The patient was capable of distinguishing light, and colours. In the left eye, the *chrystalline* humour was adherent to the greatest part of the iris: the pupil of this eye extended beneath the *cataraë*; and had changed its shape from a circle to a perpendicularly oblong form; through the lower part of which, a  
small

small share of light was admitted to the bottom of the eye.

FROM these circumstances I judged it improper to meddle with the left eye ; and at the same time considered the event of the operation as precarious in the right. However, I undertook it upon a probability of success, and couched the right eye on the third of *April* following.

UPON endeavouring to depress the *cataract*, I perceived it to make a considerable resistance to the instrument : this was occasioned by the adhesion of the *chrystalline* to the inferior part of the iris : so that I was obliged to direct my needle underneath the *cataract*, and to lift it up, before I could disengage it from the iris ; this I effected with some difficulty, and at length depressed it.

THE patient suffered very little pain from the operation. Six days after, I examined the eye ; when the *cataract* appeared to have resumed its original situation.

On the third of *May* following I couched the eye a second time ; the *cataract* now subsided much more easily than before ; this operation was attended with as little pain as the preceding. Upon examining the eye a week after, I per-



ceived the *cataraēt* to have risen a second time ; but so imperfectly, as to cover the lower half of the pupil only. The upper half of it appeared clear, and he could distinguish letters through it by the assistance of a convex glass.

I WAS in hopes, from this appearance, that the *cataraēt* might in time have subsided, as I have frequently known it do under the like circumstances. But on account of the little pain the patient had suffered from these operations, he insisted upon a third ; which I performed upon the twenty-third of the same month ; when the *chrySTALLINE* was easily depressed. But such was the disposition of the *cataraēt*, that it rose up again, though in so shaking and wasted a condition, as to promise a speedy disappearance of it. However, the patient being dissatisfied, and unwilling to return home upon a bare probability of its wasting away ; I was prevailed upon to perform the operation a fourth time.

THE *cataraēt* then subsided upon the slightest touch of the instrument, and did not appear again.

IN a fortnight after the operation, the patient was capable of reading and writing, with the assistance of a convex glass, and he still  
sees



fees well enough to follow his profession of Surgery and Pharmacy. It is remarkable, that there was hardly any inflammation or pain, in consequence of either of these operations.

WHEN this gentleman first began to look at a candle, or any other single object, it appeared multiplied to him ; and when he first read, he conceived of letters as remaining imprinted upon the bottom of the eye for some hours afterwards : but by a little use these *phænomena* were quite removed.

R E M A R K.

FROM this example it appears, how difficult it is effectually to remove a *cataract*, when complicated with an adhesion of the lens to the iris : and again, how warrantable it is to repeat the operation with a probability of success, in such cases as are attended with the like favourable circumstances.

If the *chrySTALLINE* had been totally removed by extraction, these returns of the disease could not have happened. But I am inclined to think, that if this had been attempted, the operation probably would not have terminated happily ; since the vitreous humour

## 84 CASES in SURGERY.

must in all likelihood have been wholly, or in a great part discharged, in endeavouring at a removal of the *chrystalline*: instances of which I have known to occur, and to be attended too with such unfavourable circumstances, as rendered a second operation impracticable. So that however successful this method of operating may have proved in *cataracts* that are free from adhesion, yet I think the operation is not likely to be followed with equal benefit, when they are otherwise circumstanced.

CHAP. IV.

*Of the Operation of Couching, or depressing  
the Cataract.*

THE method I recommend for performing the operation is this; the patient must be seated upon a strong and steady box or trunk of a convenient height; immediately behind the patient an assistant must stand; who must support the head, and incline it a little forwards, by pressing gently against the back part of the patient's head with his breast; or by the assistance of a pillow, placed betwixt the assistant and the patient; the assistant must carefully lift up the superiour eye-lid, and preserve it in this situation, by gently pressing it against the upper part of the *orbit*: at the same time, the operator must gently depress the inferior eye-lid with the finger of his left hand; supposing the operation be performed upon the left eye; with this precaution, that the globe of the eye be not squeezed. The patient's hands must be secured by two other assistants: this being done, the other eye must be covered with a silk handkerchief, or any thing else

that is light and pliable; the patient must then be directed to look straight forwards, or with the eye a little inclined towards the nose; the operator now suddenly penetrates the globe of the eye with the couching needle, through the *tunica albuginea*, at a very small distance beyond the circumference of the *cornea*; and as exactly as possible in a line with the most external part of the circle of the pupil; the instrument must now be cautiously pushed forwards, till it appears behind the pupil; which it will always do, when the eye remains transparent, and the eyelids are kept open: the operator must take care to press the *cataract* gently downwards, and a little outwards, with the flat surface of the instrument; which will sometimes be immediately and happily effected; but if the *cataract* should not readily submit, the needle must be carefully moved underneath the *cataract*, and gently raised up; by which means the *cataract* may be separated from the *processus ciliares* and *aranea* below, and at the same time be disengaged from the inferior portion of the *tunica iris*, (supposing it to be slightly connected with that membrane) which cannot always be foreseen: after the *cataract* is thus lifted up, the direction of the couching  
needle



needle must be changed, and conveyed a little above the upper portion of the circle of the pupil, afterwards inclining the instrument downwards, and obliquely outwards; taking care not to wound the *iris*, or the *processus ciliares*; as a division of the vessels of these parts is attended with a discharge of blood, sufficiently great to render the aqueous humour turbid, and to embarrass the operator; by these means the *cataract* will be so effectually dislodged from the bed of the vitreous humour, and its nutrient vessels so much destroyed, as to produce a gradual decay. In introducing the needle through the coats of the eye; to wit, the *tunica conjunctiva*, *albuginea*, *sclerotica*, *choroides* and *tunica retina*, it will be right to do it with the flat surfaces of the instrument, looking upwards and downwards; since by this method, less violence will be done to the coats of the eye, than if the blade of that instrument had penetrated the eye in a transverse direction. When the operation is finished, the patient's eye must be immediately covered with a rag dipt in a solution of *saccharum saturni*, or the *pulvis è cerussa compositus* in rose-water, gently kept on with a soft fine linen roller. The patient

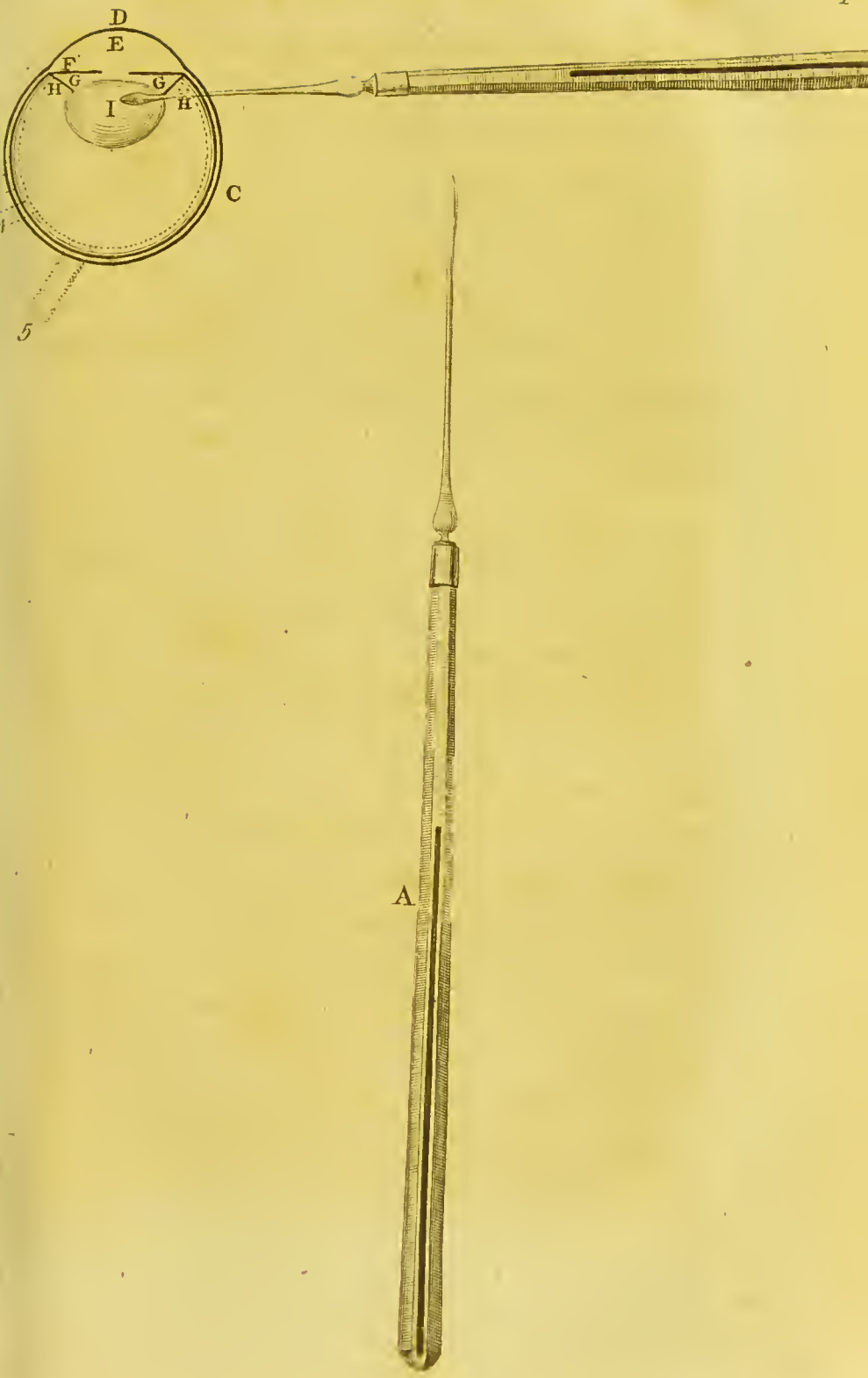


must be let blood ; his eyes must be protected from the light, so long as the pain and inflammation remain. After the operation, the patient ought to sit up-right for some hours ; as this will be the most favourable posture for preventing the rising of the *cataraët*. To render the *cataraët* still the less liable to resume its natural situation, as well as to prevent a fever, the patient must live abstemiously for some days, and take such food as requires little or no chewing. It now and then happens, that retchings to vomit follow this operation ; but this symptom seldom remains long ; when it has proved more than usually stubborn, I have known *opiates* do service. Fomentations of a decoction of poppy-heads in water, or warm cows milk applied to the eyes lids twice or thrice a day, and continued for five or six minutes each time, by the help of a warm sponge, or a bit of fine rag, are necessary, so long as any inflammation pain or stiffness of the eye remains. If the eye should continue weak ; and be attended with a more than common secretion of the tears, after the inflammation and pain are removed ; I have, in such instances, made use of cold spring-water, with a fifth part of brandy to advantage : at  
other

other times, I have used the *aqua sapphirina*, lowered with common water, or a solution of *saccharu saturni*, or the *pulvis à cerussa compositus* in rose-water; with which the eyes have been washed morning and evening; observing at the same time, not on a sudden to expose the eyes to the light. The length of time necessary for confining the patient's eyes from the light is quite uncertain; in some, there is very little inflammation or pain after the operation; in others, there is a great deal of both; sometimes attended with severe head-aches; when these symptoms occur, the patient must take cooling purges; and if necessary, perpetual blisters should be applied behind the ears, or to the nape of the neck, or betwixt the shoulders.

IN one instance of a boy born with *cataracts*, which at two different times I endeavoured to depress with the couching needle, I found them so uniformly soft, that they made no resistance at all to the instrument; but they admitted of its passing through them, just as it is known to do through the aqueous humour of the eye: the boy received no benefit from the operations. This is not that species of *cataract* distinguished by the name  
of

of the bag *cataraēt*, which is of the consistence of cream, is contained loosely in the coat of the *chrystalline* lens, called by anatomists the *aranaea*; but which upon being wounded evacuates its contents, and diffuses them in the anterior and posterior chamber of the eye; mixing with the aqueous humour, and rendering the eye turbid; but this is a species of *cataraēt sui generis*, which is rarely met with; and which, I believe, cannot be ascertained and distinguished from others previously to operating. The species of *cataraēt* I have just now described, will probably be more frequently met with in young than old people, as the *chrystalline* lens, in its natural state is known to anatomists to be more soft in infants than in adults. Since this particular case has occurred to me, I have couched a young lady of thirteen years of age, who was born with *cataraēts*; but there was no appearance of this liquid state of the disease. The operation was performed on both eyes; one of which succeeded very well: however, in this case, the *cataraēts* were more soft, and gave less resistance to the instrument than could be wished.







THE blade of the couching needle should be at least a third part larger than those that are generally used upon this occasion; as great advantages will be found in the depression of the *cataraët*, by the increased breadth of the blade of the instrument; and its handle, if made something shorter than is usually done, will enable the operator to act with greater steadiness than he can do with a long handle. For this hint, I am indebted to my good friend, the late Mr. *Gooch* of *Norfolk*: whose abilities in the profession of Surgery were so great, and whose general character had long been so firmly established, as to be incapable of receiving any addition from such encomiums as I am capable of bestowing.

*An Account of the Operations of the Cataract, for the Extraction of the Chrystalline, done by Monsieur Poyet, before the Commissaries of the Academy, as drawn up by Messieurs Morand and Verdier. Abstracted from the Memoirs of the Royal Academy of Surgery at Paris.*

THE Academy has observed with pleasure, the eagerness which has been shewn to make the operation for the *cataract* more simple and perfect, by extracting the *chrystalline*, which has been successfully practised by M. *Daviel*, who has himself given an account of this method, page 337. See *Acad. Royal of Surg. at Paris*, printed *Anno 1753*. Several persons have invented an instrument, and almost at the same time, with which the *cornea* might be divided in such a manner as to make one instrument only necessary.

MONSIEUR *Poyet*, formerly Surgeon of the *Hotel Dieu*, and lately appointed Surgeon of *La Charité*, hath presented one of his own invention. A little time afterwards, Mr. *Sharp* of *London*, sent to M. *Morand* the design of  
another

another instrument, which he had exhibited to the Royal Society.

MONSIEUR *Poyet* has already made some experiments upon dead bodies with his instrument, before the commissaries named by the Academy for that purpose: they report, that it appeared to them to have succeeded particularly well. M. *Morand*, from that time, engaged to ask leave of the governors of the Hospital of invalids, for M. *Poyet* and M. *La Faye*, to operate, which they consented to, out of regard to the great zeal which the Surgeons of *Paris* shew for their Art.

MONSIEUR *Morand* assembled nineteen people diseased with proper *cataraacts*, who were prepared for the operation; and on *June* the 11th, 1753, they were all operated upon, one after another. Six of the operations were performed by M. *Morand*, six by M. *La Faye*, and seven by M. *Poyet*; of which take the following account. M. *Morand* endeavoured to depress the *catdract* of M. *Vallot*, an Officer aged 65 Years; but from some unaccountable accident it escaped from its bed, upon being touched with the needle, and was ready to pass into the anterior chamber of the eye. Upon which M. *Morand* recommended the patient  
to

to M. *Poyet*, as a favourable opportunity of trying his operation, which M. *Poyet* accepted of. When the *cornea* was sufficiently divided, the *chrystalline* immediately followed without any pressure at all, and no accident happened. The cicatrix of the *cornea* appeared firm on the eighth Day. The patient was visited by the commissaries on July 11, and 25, when he declared he could not distinguish objects. Upon examination, it was found he had a *gutta serena*; and besides this, a second *cataract* was formed by a thickening of the membrane, which invests the bed of the vitreous humour.

*John Baptist Roux*, aged 65, was operated upon next by M. *Poyet*; after the *cornea* was divided, the *chrystalline* fell out upon the eye being gently pressed; the patient had only a slight inflammation of the *conjunctiva*; he was visited by the commissaries on July the 11th, and could distinguish objects. He was visited again on July 25, and could only see daylight; his eye was attacked with an inflammation; upon the whole, he sees but little.

*Peter Mercier*, aged 64, was next operated upon, by M. *Poyet*, he had no bad symptoms  
after



after the operation ; he sees very well. The pupil has changed its figure, and is not quite round.

*Francis Riviere*, aged 56, was operated upon next: the *cornea* of his right eye was opened by *M. Poyet* ; the *cornea* of his left was opened by *M. La Faye* ; he has had no accident in the right, but has suffered greatly in the left eye ; he can see light, but cannot distinguish objects.

*Julien Le Gendre*, aged 70, had his *cornea* opened by *M. Poyet* ; he has had no accident ; the pupil has changed its shape, and he can distinguish colours.

*Claude Boucher*, aged 72, had both his eyes very much sunk, and his eye-lids a little cleft : the section of the *cornea* of the right eye was a little too small, by which means *M. Poyet* was obliged to press the eye a little more than usual, to squeeze out the *chrystalline*. A considerable inflammation succeeded this operation, which was followed with a suppuration of the whole globe of the eye, and the patient lost the sight of it. The left eye had no accident ; the patient with that sees indifferently well.

SUCH



SUCH was the state of M. *Poyet's* patients on *July* the 25th, which was six weeks after the operations.

IT now remains for us to tell his opinion upon some points, and compare his operations with the others. M. *Poyet* thinks the instrument for cutting the *cornea*, ought to be straight like his own ; he pretends, that the iris is by that means less liable to be wounded, and that the section of the *cornea*, made with an instrument a little convex, becomes more difficult.

M. *Sharp's* instrument is also straight, M. *La Faye's* instrument is a little curved on the fore part of its blade. But we have not been able to distinguish any difference in their advantages. They each of them had one patient, whose iris was a little wounded.

MONSIEUR *Poyet* attributes the inflammation which befel the eye of one of his patients, to the *conjunctiva* being wounded ; but we do not think this a sufficient reason to account for it. However, we agree with M. *Poyet*, that the *cornea* should be divided two thirds of its circumference to facilitate the exit of the *chrySTALLINE*, if it presents itself readily ; or to be able by this means to cut with ease the  
capsula

*capsula* of the *chrySTALLINE*, if it adheres too much to its bed. We do not think that the imposthumations which happened to the eye, operated upon by M. *La Faye*, and to that operated upon by M. *Poyet*, are to be attributed to their instruments. These accidents have happened to M. *Daviel*; nor do we think these accidents peculiar to the operation of the *cataraët* by extraction of the *chrySTALLINE*: since we have seen them happen in the common method of couching.

IN fine, we will give a short account of the success of these nineteen operations which have been successively performed.

OF the six *cataraëts* couched by M. *Morand* in the common method, three have succeeded and the patients see very well; three of the *cataraëts* are risen again.

OF the six which M. *La Faye* has operated upon by extracting the *cataraët*, there are two that see well, two who see not so well, and two who do not see at all.

OF the seven operated upon by M. *Poyet*, two of them see well, two not so well, one sees day-light, two do not see at all.

THIS is a true account of the proceedings and success of the operations; but we are not

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answerable for any accidents which may have happened since our last examination, as they would be foreign to the operation.

*Abstracted from the Memoirs of the Royal Academy of Surgery at Paris, published Anno 1753.*

**I**N Page 338, M. *Daviel* distinguishes *cataraëts* into two species only; one he calls the true *cataraët*, or that of a good kind; the other he calls the false *cataraët*, or that of a bad kind, when it is accompanied with other diseases. He says, it is not the colour of the *cataraët* which determines the good species, but other circumstances; such as the motion of the pupil of the eye, and the ability of distinguishing day from night.

MONSIEUR *Daviel* says, he received the first hint of this operation from an accident which happened to him in couching the common way; the *chrySTALLINE* was broken into pieces, and escaped into the anterior chamber of the eye. This determined him to open the *cornea transparenS* to empty the anterior chamber,

chamber; after which the pupil appeared clear, and he could distinguish objects; but in ten days after the operation, there ensued an inflammation and suppuration of the eye, which he attributed entirely to the violence done to the vitreous humour, and to the inner membranes of the eye in his first attempt; this made him determine not to proceed for the future in the same method, but to begin with opening the *cornea*, and afterwards to introduce a small spatula into the anterior chamber of the eye, and to dislodge the *chrySTALLINE* from its bed; which he did upon a woman, and she was cured in fifteen days.

THE event of this operation induced him to try it upon four more, which he did with success. But, says he, there appeared to me to be still many things wanting to perfect this method. After these four, he tried the same method upon several others, but not with equal benefit. From this time he thought proper to try a new method of operating. The preceding operations had been performed by three instruments, viz. a curved needle, a pair of crooked scissars, and a small spatula. But he now undertook the

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operation



operation with two instruments only; one like a small bistory, with which he opened the *sclerotica*: afterwards he introduced a small spatula through the same opening into the eye, betwixt the posterior part of the iris, and the *chrystalline* humour; and by this means easily depressed the *cataract*.

A GREAT many operations of this kind being attended with success, as many eminent Surgeons, he says, can testify, he thought for some time this method preferable to any other. He put in practice all the different methods of operating, and with all the different instruments: but he found upon the whole, that when the vitreous humour, and the several membranes that are situated behind the iris, are disturbed by the needle, there very often succeeded inflammations and suppurations of the eye, and sometimes an atrophy of the globe, with other accidents. On which account he at length dropped this method, and determined for the future to operate, by opening the *cornea*, as he had done at first.

In the following manner, he says, he has performed two hundred and six operations:

out



out of which, one hundred and eighty two have succeeded.

IT is of no consequence (he observes) of what kind the *cataraëts*; are whether soft, hard, of long standing, or of different colours. The operation will succeed equally well, if the eyes be sound in other respects; because the principal intention of his operation is the extraction of the *chrystalline*: which is easily affected by these means. The instruments he employs are a curved needle with a sharp point, and sides like a lancet; a blunt pointed curved needle, with sharp sides; a pair of crooked convex scissars; a small spatula of gold, silver, or steel, a little curved, to lift up the *cornea* with; another small pointed needle, which cuts on both sides to open the *capsula* of the *chrystalline* humour; a small golden, silver, or steel curette to facilitate the issue of the *chrystalline*, or to draw out the remaining fragments when they stick to the edge of the pupil; and besides these, a small pair of pincers to take out any pieces of the *capsula* of the *chrystalline*. The method of his operating is this; he places the patient opposite to him, upon a seat of a convenient height, and covering one eye with a

bandage, the upper eye-lid of the other is held up by an assistant placed behind the patient ; and the under eye-lid is held down by the operator, who places his elbow upon his knee by way of support to his arm ; then he plunges the first instrument like a lancet into the bottom of the *cornea*, near the *sclerotica*, and thrusts it a little above the pupil ; taking care not to wound the iris : this being done, he withdraws this instrument ; then introduces the blunt pointed needle, with which he enlarges the incision by cutting on each side still more ; as the *cornea* is now grown flaccid, he makes use of a pair of curved convex scissars, with which he enlarges the wound on each side still more, till the *cornea* is divided near three parts round ; then he introduces a small spatula into the wound, with which he lifts up the *cornea*, and afterwards proceeds to wound the *capsula* of the *chrySTALLINE* with a sharp small couching needle. Sometimes, says he, this membrane must be cut all round in order to bring it intirely out, if it is thickened and wrinkled, for fear it should obstruct the pupil ; when it is so cut, it may be extracted with a pair of pincers : after having

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ing cut the *capsula* in this manner, the spatula may be introduced betwixt the iris and *chrystalline* to detach it from its bed, and facilitate its exit.

THE *cornea* is then to be put in its proper situation again, and at the same time the inferior part of the globe of the eye must be gently pressed, by which means the *chrystalline* may be squeezed out without breaking the posterior part of the *capsula*, which keeps the vitreous humour in its proper place. M. *Daviel* says, he thinks there are no inconveniencies attending this method of operating, but what may with care be avoided; and it has this great advantage over others, that the *cataraet* can never rise again.

*The Method of performing the Operation of extracting the Cataract with one Instrument only.*

THE manner in which this operation may be performed is this : the patient being seated upon a firm box or trunk, the operator places himself exactly opposite to him, sitting upon a seat of a convenient height ; and in a room where the light is

not too great, that the pupil may have the power of dilating itself as much as possible to facilitate the expulsion of the *cataract*. This being done, an assistant stands behind the patient, who places his right hand under the chin; after having first covered the right eye with an handkerchief; and by directing the patient's head back against his breast, he inclines his face upwards with the left hand on the forehead, to prevent the discharge of the vitreous humour, and to keep him steady. The same assistant lifts up the superior eye-lid with the fore and middle finger of his left hand, taking great care not to press the globe of the eye above. The operator at the same time depresses the inferior eye-lid with the fore and middle finger of his left hand; with this precaution not to press the globe of the eye below. The patient must look straight forwards, and a little upwards: the operator then plunges the blade of the knife suddenly into the globe of the eye, on its external part; near the circumference of the *cornea*; and opposite to the center of the pupil: directing it horizontally betwixt the *iris* and *cornea*, till its point appears on the opposite side; when the *cornea* must be divided, by directing the blade of the knife downwards:

by



by these means the *cornea* becomes almost half cut through ; and the aqueous humour is evacuated. The blade of the knife must now be gently drawn backwards ; and its point must be carefully directed through the pupil, for the purpose of wounding the *aranea*. Immediately after the *aranea* is wounded, the globe of the eye must be pressed gently upwards ; so that the *cataraët* may be discharged through the wounded *cornea*.

I LOOK upon the division of the capsula of the *cataraët* to be of great consequence in this operation ; because this membrane becomes sometimes so tough and thick, as to make a considerable resistance to the pressure of the globe : in which case, a great part of the vitreous humour is discharged in the operation.

It sometimes happens, that the *cataraët* immediately follows the division of the *cornea*, without any pressure being made upon the inferior part of the globe of the eye : owing to the involuntary contraction of the four straight muscles of the eye.

This operation, it must be remembered, cannot be advantageously performed but  
upon



upon those, who have the power of keeping their eyes tolerably steady, and therefore should not be attempted upon young children born with *cataraëts* : whose eyes I have observed to be in frequent motion : unless some instrument can be made use of, so as to keep the globe of the eye from rolling about.

THE common *speculum oculi* must not be made use of in this operation, since the compression from that instrument will be found to be so considerable as to squeeze out a great part of the vitreous humour, before the operator can make the wound sufficiently large through the *cornea*.

IT very often happens, that a small part of the vitreous humour is discharged in the most successful operation ; but I have seldom known it happen otherwise in such cases than to be soon restored.

THE inflammation succeeding this operation is generally considerable ; but neither that, nor the operation, is very painful. It is frequently several weeks after the operation, before the inflammation of the eye is dispersed.

DURING this state, the eye-lids should be treated with emollient fomentations, and  
cooling

cooling applications, and the patient's body must be kept open : opiates too must occasionally be administered.

If the *cornea* of the right eye is to be divided, the operator places himself in the same situation as has already been directed : supposing he has an opportunity of using his left hand to advantage : but if he has not a proper command of his left hand, he must stand behind the patient ; and after having lifted up the superior eye-lid, he must use his right hand.

THE assistant at the same time must be placed before the patient, in order that he may treat the under eye-lid, with such precautions as have already been advised.

THE knife for the performance of this operation is like that which is recommended for the performance of the operation of cutting the iris ; only that this instrument should be three times as broad ; and at least twice as thick, and as strong as the iris knife is made.

FOR a more elaborate account of the anatomy of the human eye ; as well as for a more exact account of the mode of performing this operation : I take the liberty of referring

ferring the reader to the second edition of my Treatise, entitled, a Description of the Human Eye, and its adjacent Parts, together with their principal Diseases, and the Methods proposed for relieving them. Printed and published anno 1775.

IN this Treatise may likewise be seen a plate of three instruments that are recommended for; and adapted to the opening of the *cornea*; and for the incision, or lancing the capsula of the *chrystalline* humour, which when diseased, takes upon it the term of *cataract*.

## CASE XV.

*Of an extraordinary Tumour in the right Orbit of the Eye.*

**R.** S. aged 42, had a large schirrous tumour formed in the superior part of the orbit, which had been growing seven years: It had at length acquired so great a size as to push the globe of the eye considerably downwards, and out of its socket. The tumour appeared at first in the shape of a small moveable swelling, which took its rise under the upper eye-lid.

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Fig. 1.

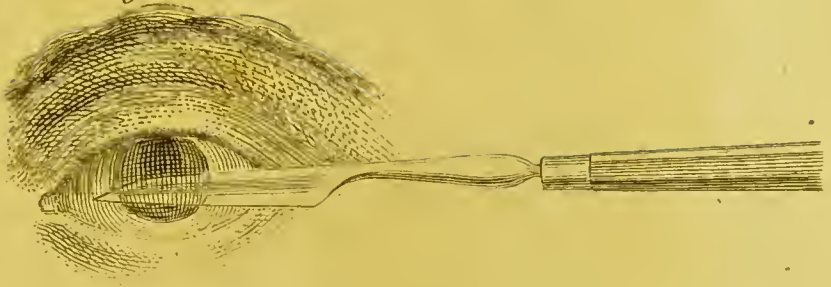


Fig. 2.



Fig. 3.



Fig. 1. The Eye with the Instrument passed thro' y<sup>e</sup> Cornea.  
 Fig. 2. The Eye with the Wound on y<sup>e</sup> inferior part of y<sup>e</sup> Cornea.  
 Fig. 3. The Cataract, or diseased Crystalline Humour.





THE tumour increased gradually, and without pain for the four first years. For the three last years it became very troublesome, and full of pain; which extended to the whole of that side the head.

THE sight of the eye became impaired in proportion to the increase of the tumour.

ON the 30th of *March* 1749, he was admitted into the hospital; and in ten days afterwards it was cut out.

THE tumour was found to extend itself from the outer corner to within a very little of the inner corner of the eye, and quite to the bottom of the socket. The operation was difficult, and attended with considerable pain, which continued for several days; after which, he became perfectly easy. During the cure, there was a large discharge from the wound; in about eight weeks the wound was healed, and he continued perfectly easy. His sight was much the same as before the operation.

#### R E M A R K.

WHEN the eye is thrust out of the orbit by a subjacent tumour, the tumour frequently takes its rise from the brain itself; which  
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circumstance renders the operation impracticable. Sometimes the tumour, though it arises within the orbit, is of a cancerous nature, and affecting all the contents of the orbit, renders the absolute removal of it impossible. These circumstances have brought the operation into disrepute. But there sometimes is a species of schirrhous tumour within the orbit, where the operation may be attended with success.

NOTWITHSTANDING, that after the cure in the preceding instance, the eye remained in the position it was before the operation, and with the same imperfection of sight (from probably the compression which the optic nerve had sustained) yet the patient being free from pain, and in every other respect perfectly well, was sufficiently recompensed for the pain of the operation.

## C H A P. V.

*The Manner of performing the Operation.*

THE method I took for the performance of the operation was this: I placed the patient in a chair with the back part of his head leaning upon a pillow: which was laid upon an adjoining table of about three feet high. In this situation his head was firmly supported by means of a proper assistant, whilst I proceeded to make an incision upon the tumour with a round pointed knife. The first incision was so contrived as to extend a little beyond each extremity of the swelling, and to incline with its horns towards the globe of the eye.

IMMEDIATELY opposite to the first incision I made a second, equally long; and in such a direction that its horned extremities might correspond and join with those of the first incision.

THE incisions were at once made through the integuments, and that portion of the orbicular muscle which forms a part of the upper eye-lid. When I had thus far proceeded,

ceeded, I carefully dissected out the tumour from its bottom with the piece of integuments, and orbicular muscle of the eye-lid annexed to it.

THERE was no application required for restraining the bleeding of the wound, but lint and flower assisted by moderate pressure.

IN this, and every other operation, where the knife is made use of, it is necessary to have an assistant at hand with a bason of warm water, and a bit of soft sponge, to wipe away the blood occasionally, that the operator may not be embarrassed in his pursuits.

## C A S E XVI.

*Of an uncommon Tumour upon the Roof of the Mouth.*

*A.* B. aged 40, had a tumour formed upon the roof of his mouth, which at length had arrived to so great a size, as to prevent his feeding upon any thing but liquids. The tumour had been growing about seven years; and at length possessed the whole roof of the mouth. He came to *London* in *June* 1747, and

and was admitted into the Hospital under my care. In consideration of the foregoing circumstances, and the improbability of procuring relief by any other methods, it was recommended to him to have it cut out; but at the same time the operation was judged hazardous, from the *hæmorrhage* that might probably arise from it, and the difficulty of stopping it; as had happened sometime ago in a similar case; but as no other methods could be thought on for his relief, I undertook the operation, and performed it in the following manner.

THE patient being properly seated, and secured, a piece of wood was placed betwixt the teeth on the left side of his mouth; and a curved knife, such as gardeners make use of in pruning trees, was conveyed to the posterior part of the tumour, with which I effectually separated the tumour from its basis. The *hæmorrhage* that ensued upon the operation was so trifling, as to require no pains in stopping it. But in a few hours afterwards, a considerable artery burst out; which bled freely, and could not be restrained by pressure, or other gentle means. Seeing this, and considering the impossibility of

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using



using the needle and ligature to advantage, I had recourse to the actual cautery, which answered the end, and the patient was perfectly cured in three weeks, without farther trouble.

UPON opening the tumour, it was found to consist of a firm cartilaginous substance, mixed with long boney particles.

## R E M A R K.

THE actual cautery is hardly ever made use of in *England* by Surgeons of the present age, to stop bleedings. The crooked needle and ligature are for many reasons justly preferred to it. But nevertheless, there are some instances where the actual cautery will be found necessary, as the preceding case undoubtedly proved.

## C A S E XVI.

*Of two Operations performed upon the Tonsils.*

THE tonsils, vulgarly called the almonds of the ears, are two remarkable glands of the *salviary* kind, of a reddish colour, situated on each side of the basis of the tongue. The tonsils are subject to a variety of

of diseases, proceeding from a variety of causes; which diseases, according to their different circumstances, are known to require different methods of treatment. An inflammation of these parts arising from slight fevers is a very common complaint; in consequence of which it sometimes happens, that one or both of these glands become so enlarged (notwithstanding the attempts to relieve the patient by repeated bleedings, purgings, clysters and blisters, assisted with the most powerful gargarisms) as to bring on a difficulty of breathing, frequent retchings, and inability of swallowing, even the thinnest liquids, but with the greatest difficulty; in such instances I have oftentimes found the practice of scarifying the tumour or tumours has given almost immediate relief, by evacuating a quantity of matter which has been deeply lodged in their substances; and at other times, when no imposthumation has yet been formed, (though the swelling has been very great and alarming,) the incisions, by dividing the investing membrane, and discharging a quantity of blood from the bodies of the tonsils, have gradually removed the tension, and diminished the sizes of these en-

larged bodies, to the great ease and safety of the patient, who was before in continual apprehensions, pain and danger of suffocation. The manner of performing this operation is, by gently pressing down the tongue with a spatula, or the handle of a common silver table-spoon held in the left hand ; whilst with the right hand such an instrument as is generally made use of for lancing the gums of children may be conveyed down to the diseased part, with which two or three deep incisions of at least the third part of an inch long must be made into the substance of each swelling, (provided both tonsils be diseased.) This operation will not be attended with much pain or difficulty, if the instrument be very sharp : the benefit accruing from it is not merely a temporary one in all cases ; for it sometimes happens (unless I am greatly mistaken) that the events of this method are so successful as to prevent a return of the swelling, owing probably to the entire divisions of the investing membrane, and to the firm cicatrices which are formed in the body of the gland or glands, consequent upon healing of the incisions. I am led into this opinion from having known some subjects who

were

were alarmed and harrassed with these complaints, sometimes once, sometimes twice a year, arising from colds and fevers, before I had treated them in this manner; but since they have undergone this operation they have not, as before, been liable to a return of these troublesome swellings, although their fevers have occurred as usual. I once saw an instance of a tonsil so excessively enlarged as to occupy almost the whole of the roof of the mouth; and to resist every attempt to its removal but excision; of which, on account of the very extraordinary circumstances attending this case, I am induced to give a minute detail in the following words.

In the middle of *January*, in the year 1757, *J. M.* aged 44 years, was attacked with a cold, and fever accompanied with a complaint in his throat; this symptom increased till the 31st of the following month of *March*, when he was put under my care: the circumstances attending his disorder were these: he was incapable of taking any kind of nourishment but such as was liquid; he could not speak so as to make himself easily understood; the patient had been afflicted for the three or four last weeks with severe



pains in his right ear, and a deafness, (owing I suppose to the pressure which was made upon the neighbouring extremities of the *Eustachian Tubes*;) upon looking into his mouth there appeared a tumour of an enormous size; its shape resembled that of an egg, with its basis looking towards the *œsophagus*. The swelling extended itself so far forwards as to approach very nearly to the roots of the *dentes incisivi* and *dentes canini* of the upper jaw. On the right side it extended itself so far as to come in contact with all the *dentes molares* of the same side of the jaw; to which several parts, as well as to almost the whole of the roof of the mouth, it firmly adhered: the posterior part of the tumour extended so far down the *œsophagus* as to render it impracticable for me to reach beyond its limits with my finger. The surface of the swelling was perfectly smooth and shining, and was uniformly covered with the same thin membrane (*epithelion*) that naturally invests the mouth. From the size of the tumour, the *uvula* was so much removed from its original situation, as to be brought considerably forwards, and was so far pushed to the left side of the upper jaw, as to press forcibly against the two last  
of



of the *dentes molares* on that side : from the size of the swelling, as well as from the pressure which the neighbouring parts had sustained, there was no discovery to be made of the *velum pendulum palati*. At the beginning of the disease, the patient had been treated in the methods generally directed for the removal of inflamed sore throats proceeding from *plethora* ; that is, he had been let blood, been purged and blistered, but without success ; seeing these endeavours had not only proved unequal to the relief of his disorder, but on the contrary, that it had gradually increased, and still continued to do so, I thought it adviseable to puncture the tumour, which I did in several places with the point of a lancet, on presumption that it might possibly contain a fluid ; or if it did not contain a fluid (which I rather judged to be the case, and as the experiment proved) I imagined that the vessels might possibly be unloaded from the discharge of blood consequent upon these punctures ; or at least that the tension might be so far removed as to give time for the trial of emollient fomentations : such as the steam of warm milk and water conveyed to the part by the help of a funnel : which was for some time used, but ineffec-

tually; the tumour encreasing wth an encrease of the symptoms: for these reasons I determined upon cutting it out; which, though I considered as a very difficult, tedious, and troublesome operation to effect, was nevertheless executed in the following manner.

THE patient being placed in a seat of a convenient height, and his head supported in as steady a posture as possible, I fixed a bit of wood betwixt the upper and lower jaw on the left side; which by an assistant was occasionally retained in that situation, during the farther processes of the operation: this being effected, I made a circular incision with a common round pointed dissecting knife, in such a manner as to separate the tumour from the lateral and anterior parts of the roof of the mouth; after which, I endeavoured at the extirpation of it from its basis with a knife that had a blade made in a peculiar form: I found this instrument extremely useful on the occasion; and as it may probably be thought so in future cases of the like nature, I have annexed a print of it to this chapter; by which means the reader will have a clearer idea of it than he could have had from any verbal description I am capable of giving him. The manner in which  
I used

I used this knife was by introducing the edge of the blade, as far as I possibly could, beyond the extent of the swelling on its right side ; then, by bringing it forwards, I directed in carefully betwixt the extent of the tumour on the same side and the *uvula* ; in this attempt I was successful enough to remove the greatest part of the swelling ; when that was effected, the patient was obliged several times to cleanse away the blood which discharged very freely ; but by the help of equal parts of cold water and vinegar, the *hæmorrhage* was soon stopped. I then proceeded to a removal of the remaining part of the tumour : which I accomplished with the same knife, assisted with an hook. After this attempt the wound bled freely, but was restrained in the same manner as before.

FOR seven or eight days after the operation, there were several pieces of sloughs which digested off by the use of deterfive gargarisms : at the end of this time the patient began to feed upon solids. The day after the operation his respiration became free ; and at the end of three weeks he had almost recovered his usual tone of voice. No applications were made to the wound after the day of the operation but  
a gargarism

a gargarism of barley-water, sweetened with honey of roses ; to which was added an eighth part of tincture of myrrh. Before I undertook the operation, there was no determining what gave rise to the tumour : but after it was cut out it seemed to be nothing more than the right tonsil which had encreased to this extraordinary size. The body of the tumour was solid ; and on its surface it exactly resembled an inflamed tonsil ; but upon inspecting its internal part, the texture of it appeared to be more loose and spongy than those bodies naturally are. There was not the least appearance of a schirrus in any part of it, as is sometimes known to be the case in diseases of these glands ; which under some circumstances do require, and safely admit of extirpation by ligature. About six months ago I was consulted by a patient who had long laboured under a difficulty of swallowing, and a slight deafness, attended with a croaking tone of voice ; upon looking into his throat, I discovered that the right tonsil was enlarged to the size of a pigeon's egg ; it was unequal in its surface ; hard to the touch ; and appeared in colour and form like a white conglomerate gland. I advised the extirpation of the tumour, which

was



was consented to; and I performed the operation in the following manner. The patient being seated in a chair of a proper height, with his mouth wide open, I passed an eye probe, with a ligature fixed to its broad end, down the throat, and directed it beyond the gland; the end of the probe to which the ligature was fixed was bent in the form of a semi-circle: after the probe had been passed beyond the basis of the tumour, it was pulled gently forwards on the opposite side of the gland quite out of the mouth. The probe was then cut away; and the ligature being first tied upon the basis of the tumour, with the surgeons knot, was afterwards farther secured by tying upon it a second and third time in a common manner. The ligature was the thickness of a common tent probe, composed of shoe-maker's thread twisted tightly together, and well waxed; the tumour dropped off in eight days, and the patient got rid of his several complaints. But in the case of *J. M.* p. 117, the swelling was so differently circumstanced as rendered it impracticable to execute its removal by any other means than by excision; which operation, though it might reasonably be apprehended to be attended with some hazard, on account



count of the *hæmorrhage* that might probably ensue, was nevertheless most certainly advisable, from the pressing circumstances which attended the case. It may be observed, that the difficulty of breathing in this case proceeded from two causes; first from the size of the tumour, being so large as to possess almost the whole of the *pharynx*, which is situated immediately above, and leads to the *rimula* of the *larynx* and the *epiglottis*: secondly, from the great degree of pressure being made upon the *velum pendulum palati*, which necessarily cut off those communications that in a sound state subsisted betwixt the nostrils and the *aspera arteria*: and which served to convey the air into the lungs in the acts of inspiration.

## REMARK.

IF astringent washes had not proved equal to the suppression of the *hæmorrhage* arising from the divided vessels, I had prepared for that purpose the actual cautery, which must have been made use of. This I have in the former case of *A. B.* advised for the like operation if necessary; but where the use of the actual cautery is not found to be absolutely necessary, it should be discarded in favour of such methods as are known to be less painful

Pl. 3.

p. 124.



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painful, as well as less terrible to the patient. This operation, which I have given so particular an account of, succeeded to my desire, so far as related to the removal of the tumour, and the present relief of the patient; but in a few months afterwards he was attacked with an asthma and a gradual decay; for which he went into the country for the benefit of the air, but with no great prospect of recovery. As I had not an opportunity of hearing of the patient since he left me, I am uncertain what was the event of his illness; but it is most probable he did not live many months, since there was too great reason to believe his lungs were attacked with the same kind of disorder. Of this I should certainly have satisfied myself had I been acquainted with his death, and could have gained permission for inspecting the thorax.

CASE XVII.

*Of an encysted Tumour situated upon the fore part of the Neck, successfully extirpated.*

**A.** B. a Girl of about 14 years of age, had a tumour formed upon the fore part of the neck, immediately beneath, and on the left side of the thyroid cartilage; the tumour  
had

had been growing about four years, and was at length become so troublesome from its situation and size, as to occasion a difficulty in breathing, and a total inability of swallowing any thing but liquids. It was of the encysted kind: and the cyst contained a quantity of fluid. Its situation was betwixt the *aspera arteria* and the *æso-phagus*, as appeared in the operation. It was cut out, and the patient did well in a few weeks. But on account of its deep situation, only a part of the cyst was dissected out; the rest of it came away in a few days afterwards with the dressings. The patient, since the operation, has been free from any inconvenience in breathing or swallowing; and is otherwise perfectly well.

## R E M A R K.

THERE is a species of tumour sometimes formed betwixt the *aspera arteria* and the *æso-phagus*, which from its schirrous nature, extent of its basis, and deep situation, renders all attempts to extirpation unadvisable. An instance of which *Tulpius* has given us in the 44th chapter of his first book of *Observations*.

A CASE similar to that, I was consulted about some time ago, in a man 55 years of age.



age. The tumour increased so fast as to destroy him in a few months. But where the Tumour is differently circumstanced, both as to its nature and contents, the operation is adviseable; as the preceding instance undoubtedly proves. The success of which sufficiently warranted the undertaking.

CASE XVIII.

*Of a Steatoma, possessing the greatest part of the Neck on one side, successfully extirpated.*

**S** G. aged 45, had a large tumour on the right side of her neck, which had been growing for twenty years. It was much larger at its basis than at any other part, and extended from the right mastoid process to the clavicle on the same side; and from all the *vertebræ* of the neck to the mastoid muscle; under which a part of the tumour was situated. The tumour was not attended with pain; but had of late become so insupportable from its size, as to render her incapable of getting her living.

living. Under these circumstances she applied to me. I saw no objection to the operation, and accordingly advised it; which was complied with. There was no extraordinary circumstance or difficulty attending the operation, but that it required some care and nicety in dissecting out that part of the tumour, which lay under the mastoid muscle upon the internal jugular vein, and carotid artery. There was but one vessel which required tying, a circumstance very uncommon in a swelling of this size, which weighed near four pounds.

IN the operation, all that part of the *trapezius* muscle covering the back part of the neck, was laid bare. The whole of the *Platysma Myoides* was taken away with the tumour, and the *Coracohyoideus* muscle appeared in view. After the tumour was removed, and the *hæmorrhage* ceased, I passed the needle and ligature twice through the integuments, in a transverse direction, to prevent their retraction; by which means I hoped the cure might be hastened. This seemed to have the desired effect, and the wound was perfectly healed in six weeks.

## REMARK.

IN all steatomatous tumours it is absolutely necessary to remove the whole of the swelling if possible ; and not to trust to the effects of dressings for the removal of any part that is left behind.

I HAVE known instances, where, by trusting to this method, it has been found necessary to repeat the operation, which seldom fails to bring a reflection upon the Surgeon.

I ONCE knew a particular instance of this kind in the case of a *steatoma*, which grew in the inner corner of the eye. Its basis was situated upon the *lachrymal sac* ; which it was apprehended there was a danger of wounding with the knife. On this account, a very small share of the tumour was left behind. This in a few months afterwards, arrived to the size of the former swelling, and required a repetition of the operation, which was then effectually executed ; as I had an opportunity of informing myself some years afterwards.

FOR the manner of operating see the case of R. S. p. 108, in which the performance of the operation differed in no other respect

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than

than in the situation of the patient and size of the wound. The patient was seated in a chair, with her head and neck held as upright and as steady as possible.

## C A S E   X I X.

*Of an incurable Disease of the Œsophagus.*

**I** H A V E already given an instance of a difficulty in swallowing, which arose from a pressure made upon the *œsophagus*, by a considerable tumour that appeared externally upon the throat, and observed that the patient was cured in consequence of its extirpation. I took notice likewise, that some of these tumours arising in the neighbouring parts, are not to be relieved by operation, on account of the greatness of their extent, &c.

BESIDES the incurable tumours to which these parts are liable, there is another species of disease, which seems equally dreadful in its consequences, and incapable of being relieved by Physic or Surgery. This disease is but too common; though not, to my knowledge, as yet described by writers.

IN *July*, 1752, *F. L.* a young woman aged 25, was admitted into *Guy's Hospital*, and  
put

put under the care of the Physician, on account of the difficulty in swallowing, with which she had been afflicted for some months. She had made use of all the means that could be thought of in Physic for her relief; but to no purpose.

THERE was nothing appeared outwardly that could lead to the discovery of the malady; but she complained of a particular tightness in swallowing, just below the back part of the *cricoid cartilage*. The part affected was situated too low to be looked into; but it was easily discovered by conveying down the throat a bit of sponge fastened upon whalebone, first dipt in sweet-oil; which, though very small, could not be made to pass beyond the part diseased. The patient at length became incapable of taking any nourishment; and died soon after.

I OPENED the neck after her death, and carefully examined whether I could discover any swelling behind the *œsophagus*, or betwixt that and the *aspera arteria*; but there was nothing of this nature that could be seen.

UPON taking out the *œsophagus*, it appeared considerably thickened about an inch in length, just beneath the *cricoid cartilage*.



UPON opening the *æfophagus* length-ways, its coats appeared so contracted in the diseased part, as to be capable of admitting a passage to a common sized probe only. The internal coat of the *æfophagus* was in part ulcerated, and besmeared with matter.

THE *larynx*, *aspera arteria*, &c. were found and well.

#### R E M A R K.

I AM afraid this remarkable case is one amongst the many in Physic and Surgery, that could not possibly have been prevented, or even relieved, if the disease had been perfectly known; and that this observation only tends to prove, what must unavoidably be the fate of other patients in diseases of the like nature.

HOWEVER, as it is always a satisfaction to the Surgeon, and implies judgment in him to be able to prognosticate with some degree of certainty, what may probably be the event of a future disease of the like kind; and by this means prevent the administering of many ineffectual applications; for these reasons, this observation probably may not be esteemed altogether useless.

C A S E

## CASE XX.

*Of a Tumour situated upon the Forehead.*

WHEN a tumour, excrescence, or any preternatural appearance is born with children, the *phænomenon* is generally distinguished by the name of a mark ; and is attributed to some particular desire of the mother during pregnancy. There are some of these excrescences which are tumours of the encysted kind ; and though at first they appear inconsiderable, yet it frequently happens that they do not remain long in that state ; but by gradually increasing, at length arrive to a considerable size ; proving troublesome and unseemly, from their situation and appearance ; to prevent which, it is generally adviseable to remove the tumour when small ; by which means much pain is prevented, and the scar arising from the wound becomes inconsiderable.

I WAS consulted some years since in the case of a child near a year old, who was born with a tumour of a claret colour upon the face ; it was at first no bigger than a common pea, but before she had arrived to that

age, the tumour was increased to the size of a wallnut.

It was judged adviseable to have it cut out, which was done, and the patient was cured in a little time.

For the manner of operating, see the case of R. S. p. 108.

### C A S E   X X I.

*Of a Tumour situated upon the Occiput.*

**I**N the year 1750, I was consulted in the case of a child, near two years old, who had a tumour situated upon the *os occipitis*. The tumour was as large as a Turkey's egg, and appeared filled with a transparent fluid. It arose from the back part of the brain, which was easily discovered, by examining the basis of the tumour. There was a defect of almost the whole of the *os occipitis*. The child was lusty and strong, and had no visible disease in its limbs. I advised nothing, but to defend the tumour from external accidents; but the parents being dissatisfied with my advice, consulted another Surgeon, who advised the extirpation of it; which he did, and the child died in a few days afterwards.

R E-

REMARK.

THIS is a species of encysted tumour which is sometimes seated upon the *vertrebræ* of the loins, sometimes upon the *vertrebræ* of the back, and at other times upon those of the neck, *os sacrum*, or betwixt the sutures of the Scull : all of which I had seen before. But never before now had I ever seen an instance of a tumour of this kind upon the *os occipitis*. These tumours are to be distinguished from all others by their rise, situation, the circumstance of their being always born with the subject, who is generally afflicted with a partial palsy ; and by their contents, which are fluid, and commonly transparent.

THEY take their rise from the brain, or spinal marrow, where there is a visible defect of the bone ; and are contained within a continuation of those membranes that naturally invest the *cerebrum*, *cerebellum*, and *medulla spinalis* : (to wit, the *dura mater*, *arachnoides*, and *pia mater*.) Which from the circumstance of the spine being divided, or rather defective in its processes in that particular part, has given them the name of *spinæ bifidæ*.

THE practice of opening these tumours by incision, or otherwise, or removing them by



ligature, has always proved fatal; as hath been observed by *Tulpius*, in the 29th and 30th Chapters of the 3d Book of his *Observations*; and by *Ruysch*, in his 34th, 35th, and 36th *Observations*. *Ruysch* observes, that children thus afflicted, seldom live to fifteen months old: however, I knew an instance of a young man of twenty years old, who had one of these tumours upon his loins. He was healthy, but had laboured under a paralyfis of his legs from his infancy; which however was not so bad as to disable him from walking.

FROM this observation I would infer, that it is always unadvisable to attempt the extirpation, or opening of these tumours; which piece of advice has been peremptorily delivered by *Tulpius*, in the following words. *Cave sis improvidè unquam aperias, quod tam facile occidit hominem*. N. B. *Ruysch* has given us a case like this in his 52d *Observation*.

#### R E M A R K.

IT is likewise in my opinion equally unadvisable to perform any operation upon the head in that species of disease known by the term, *Hydrocephalus*: because in all the instances



instances I have seen of this disease, the water has been contained in the ventricles of the brain, from whence the malady arises; and by the quantity of water encreasing, the substance of the *cerebrum* and *cerebellum* has become gradually distended, and formed what may with propriety be termed the *cyst* of the tumour.

Not many months ago I was consulted in the case of a child of 13 months old, whose head was of an enormous size; I advised that nothing should be done, but to defend the part as much as could be from external injuries. Soon after this, the infant died, and I was desired to open the diseased part; which I did in the presence of several gentlemen eminent in the professions of anatomy and surgery. Upon examining into the head, the *cerebrum* and *cerebellum*, appeared uniformly distended; no one part of the substance of the *cerebrum* or *cerebellum* was more than the sixth part of an inch thick. There was but a very small appearance of bone in the head: so that the *pericranium* and *dura mater* were joined together almost in every part; in consequence of which, they might be said to form one thick and strong bag, consisting

consisting of different *laminae*, thinly interspersed with incompleat bony fibres.

THE child was born a month or six weeks before the expected time ; about four weeks after the birth of the child, its head began to swell, and continued to do so till the time of its death. The child appeared sensible, and merry almost to the last, and had a free motion of its arms, legs and eyes. It was not more drowsy than children usually are, till a few days before its death.

## C A S E XXII.

*Of an extraordinary Disease of the Humeral Artery.*

WHEN a bone, and its neighbouring tendons and ligaments are affected with inflammation, caries, &c. the disease may sometimes extend itself farther, so as to affect the neighbouring vessels ; or it may probably happen, that the diseases of these particular parts may proceed from a previous affection of those very neighbouring vessels, from which they receive their nourishment and growth.

C. D. was afflicted with a caries of the joint of the elbow, which was attended with such  
cir-

circumstances as rendered the amputation of the limb necessary: the operation was performed at a proper distance above the diseased part, and the vessels were taken up by the needle and ligatures.

IN a few days after the operation, the humeral artery became so dilated above the ligature as to endanger its bursting. Upon this account, it was judged necessary to perform the operation for the Aneurysm; which was done, and the vessel was secured by ligature above the upper extremity of its distended coats. After this operation every thing went seemingly well on for some time, when suddenly the artery appeared again dilated, and was in danger of bursting above the second ligature. These circumstances made it necessary to repeat the operation for the aneurysm; from this time every thing went on successfully till the stump was at the point of being healed; when, quite unexpectedly, the artery appeared a third time diseased in the same manner as before; for which reason a third operation for the aneurysm was determined upon, and performed.

THE last operation was near to the *axilla*; the patient continued well from this time without any relapse.

*Query,*

*Query*, could the several aneurysms of the humeral artery be attributed to the sudden check alone, which the blood met with from its extremity being secured by ligature; or is it not more reasonable to suppose, that the coats of the artery, nearly as high up as the *axilla*, were originally diseased and weakened? the latter seems the most probable way of accounting for the successive returns of the disease of the vessel; since it is found from experience, that such accidents have been very rarely known to occur after amputations, either of the arm, or thigh, where nearly the same resistance must be made to the circulation in every subject of an equal age and vigour, who has undergone the like operation.

IF it should be supposed, that the several dilatations of the coats of the vessels arose merely from the check in the circulation; it will not be easy to account for the final success of this operation; and especially when we reflect, that the force of the blood is increased in proportion to its nearness to the heart.

THE nourishment of the stump may be accounted for, from the ramifications arising from the principal trunk about the *axilla*, which becoming dilated, in proportion to the resistance the blood meets with in its passage through



through the humeral artery, were found sufficiently numerous and large enough to convey a proper supply to the parts beneath.

THIS species of aneurysm I have been describing, is distinguished by the name of the true aneurysm; and is a disease which frequently happens to the *curvature* of the *aorta*, extending sometimes to both sides the neck: sometimes producing vertigos, convulsive fits, and admits of no other than a palliative relief.

### CASE XXIII.

*Of an Aneurysm of the humeral Artery.*

**H.** M. aged 37, was admitted into the Hospital in *July* 1753, with a disease of the right arm, which upon enquiry was found to be greatly swelled and enlarged. The tumour extended from a little above the bending of the elbow, to pretty near the middle of the cubit; and appeared somewhat discoloured, and pointed on its superior part. Upon pressing the tumour, I discovered a fluctuation, but there was not the least perceivable pulsation. He informed me of his having been blooded in the basilic vein about 13 months ago; that he felt considerable pain from the operation, and that the blood was discharged through



through the orifice by leaps. Immediately after being blooded, he perceived a small tumour to arise in the neighbourhood of the orifice, which in a week's time had arrived to the size of an egg, and continued to increase gradually for nine months. For a few weeks after the accident, the limb was discoloured from the shoulder to the wrist: owing, without doubt, to the confinement of the extravasated blood immediately under the two integuments, *cuticula*, and *cutis*, and an insinuation of some portion of it into the cells of the *membrana adiposa*. He had considerable pain for the first three months.

THE operation was determined upon, and performed in the following manner. The tourniquet and ligature being fixed upon the humeral artery, and the arm extended at its utmost length, and so placed upon a table covered with a blanket, that the tumour might present itself upwards; an incision was begun at the upper extremity of the most prominent part of the tumour, and continued downwards about three inches, directing the knife in such a manner as to describe the half of an oval; after this a second incision, corresponding with the first, was made on the  
opposite

opposite side ; by which means an oval piece of the integuments was cut out. Upon a removal of the piece of integuments, the contents of the tumour were discharged. The swelling consisted of a large ball of coagulated blood of a fibrous texture which was contained in a thick cyst, and appeared like the coats of a vein. Upon slackening the tourniquet, the wound of the humeral artery appeared circular ; and its coats were discoloured, and thickened at least an inch above the orifice. A crooked needle with a ligature was passed under the artery above the diseased part, and tied upon it. A second ligature was made upon the artery below its orifice : which should always be done to prevent the risk of an *hæmorrhage* from this part ; since it has been found that by neglecting to do this, a considerable discharge of blood has ensued some days after the operation, and the patient's life been brought into imminent danger by a reflux of blood from the neighbouring anastomoses. And indeed I have seen it happen in this operation, that after the ligature was properly made upon the vessel above the part wounded, the vessel upon the tourniquet and ligature being loosened, has bled very freely, so that the making a  
second

second ligature below the puncture of the vessel was found instantly necessary: which upon being executed the *hæmorrhage* immediately ceased. After the operation, the wound was dressed in the common manner, and the patient removed to bed.

IMMEDIATELY upon tying the artery, he complained of a numbness in his fingers, and no pulsation could be discovered in his wrist; but in half an hour after the operation, a very regular pulsation appeared, and his numbness began to go off.

FROM this time he went on very well for several weeks; but was at length seized with general convulsions attended with the symptom of a locked jaw: which ended in his death.

IT has sometimes happened, though very rarely, that an *aneurysm* of the humeral artery has arisen from a strain of this vessel: when this is the case, the *aneurysm* is of that kind, termed by Surgeons and Anatomists a true *aneurysm*: this disease advances gradually, as *aneurysms* of the *aorta ascendens*; of the *carotids* and femoral arteries are known to do. An instance of which I saw at the latter end of the year 1775, in a boy of 14 or 15 years old.

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THIS disease was occasioned by a wrench, which was so violent as to break the right *os humeri* a little above its condyles ; soon after which a tumour appeared a little above the elbow joint, and the tumour continued to encrease, till it had arrived at a size nearly equal to a Turkey's egg : the swelling was without discolouration : it had an evident pulsation, and the arm was considerably weakened by the disease. The operation was performed on the arm just as has already been described, and in this instance it was found upon slackening tourniquet, that the artery bled very freely from below, after the ligature was made above : so that a ligature on this part of the vessel was judged to be quite necessary ; and was immediately put in practice.

## R E M A R K.

As a pulsation in the part is one of the principal *characteristics*, by which an *aneurysmal* tumour is distinguished from a tumour proceeding from any other cause ; the want of it in the preceding case may be accounted for, from considering the distance which the artery was at from the integuments, occa-

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sioned by the quantity of extravasated blood that lay upon the wounded vessel: in this instance, there could be no room to doubt of the nature of the disease, as the original symptoms were a sufficient proof of it. The want of pulsation in this instance is not singular, since by the succeeding cases it will appear, that they were likewise attended with the same circumstances; partly from the same cause; and partly from the deep situation of the vessel under the *gastrocnemii* muscles, which rendered their pulsations equally imperceptible.

THE circumstance of a locked jaw is no very uncommon symptom; it sometimes comes gradually on after a wound; a fracture of a bone; a dislocation; or in consequence of the stricture made upon the arteries, and their neighbouring parts by ligatures; at other times, this symptom happens on a sudden, and is generally the fore-runner of a speedy dissolution. But there are instances where this dreadful symptom has been effectually removed by cordial medicines and large blisters applied to the whole of the back part and sides of the neck, without the assistance of opiates.



Two instances of success, from such treatment I have seen within these few years. It is generally advised, upon undertaking an operation of this kind upon the arm, to have the amputating instruments in readiness, lest a mortification should ensue upon the parts beneath the ligatures, in consequence of an obstruction arising in the vessels. But notwithstanding this is a circumstance which may possibly happen, yet I must own, amongst the several operations of this kind which I have performed myself, or seen performed by others, I never once knew an instance of its turning out so unfortunately as to require amputation.

## C A S E XXIV.

*Of an Aneurysm of the Arteria Tibialis Postica.*

*J.* B. aged 34, the last week in *April*, of the year 1748, was taken with a cramp a little below his ham, which was followed with an immediate swelling of the calf of the leg, attended with excessive pain; it continued in much the same state till the month of *July* following; when the part began to increase both in size and pain.

THE whole leg was exceedingly tense ; but there was not the least pulsation to be discovered, or the least visible discolouration of the integuments. However, upon presumption of its being an *aneurysm* from the deepness of its situation, as well as from its immediate enlargement, and great degree of pain, the operation for the *aneurysm* was attempted on the 15th of *October*.

UPON opening the tumour, the congealed blood appeared to have acquired a fleshy consistence ; and adhered very firmly one portion of it to another. Upon removing the *coagulum*, the *tibia* and *fibula* were found carious : and the orifice of the ruptured artery appeared just between the heads of the *tibia* and *fibula* ; so that it was impracticable to tie it, or at least judged unadvisable ; considering the condition of the leg.

IT was amputated above-knee on the spot, and the patient did well.

UPON opening the knee, the *os femoris* was affected, and consequently the artery diseased above the part where it appeared to be ruptured. Some years ago the operation for the *aneurysm* was performed in a similar case within a few hours after the rupture of the vessel.

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The tumour increasing so fast, and the pain proving so intolerable, that it was necessary to lose no time.

THE *tibialis postica* was burst in the middle of the leg; it was taken up with some difficulty, and the patient recovered.

## R E M A R K.

WHEN we are authorised to suspect, that the same species of *aneurysm* has happened to one of the principal arteries of a limb; or to any other large artery where the operation is practicable, and where sufficient pressure cannot be made to restrain the *hæmorrhage*, it is generally adviseable to proceed immediately to the operation, lest the neighbouring parts should become so affected by the extravasation, as to bring on a caries of the bone: and destruction of the neighbouring soft parts: and by that means render the operation impracticable: as happened in the first instance; where it was found necessary to part with the limb to save life.

IN the second instance, it is probable that this was prevented by the timely assistance given by the operation.

IN *aneurysms* of the arm, proceeding from a wound of the artery by a lancet, the cases are differently circumstanced; and though it be found, in general, necessary to proceed to incision and ligature for their cure, on account of the part having been neglected for some time after the accident; yet there are instances where upon timely application, the cure has been effected merely by compress and bandage; which I would recommend to be first of all tried in recent cases, and to be continued for three or four weeks at least: if there be no very good reason to forbid it.

THE manner in which the wound of the humeral artery has appeared, upon examination to be cured, is by an intimate cohesion of the *aponeurosis* of the *biceps muscle*; of the *capsula*; and of the wound of the vessel; and it has been farther observed, that the orifice made in the artery (which appeared circular) has been stopt up with a clot of solid blood, resembling, on its external part, the head of a nail; which adhering firmly to the *cicatrix* of the integuments, produced a considerable callosity.

N. B. For the method of performing this operation. See the case of *H. M.* page 142, from



from which the operation differed not but in the following particulars; to wit, the compression with the tourniquet ligature was made upon the *femoral* artery, and a removal of a part of the bellies of the *gastrocnemii* muscles was found necessary to allow room for the discovering the extremities of the artery, and tying them with the ligatures.

C A S E XXV.

*A remarkable Case of an Aneurysm of the Femoral Artery, occasioned by a Fall. To which is prefixed, a short Account of the Uncertainty of the characteristics of this Disease; communicated to the Royal Society, Nov. 17, 1757, and inserted in their Transactions.*

WHEN the coats of an artery become by any means preternaturally distended; when they become wounded; or when they become ruptured in such a manner as to discharge and deposit their contents under the neighbouring integuments; under the *aponeurosis* of a neighbouring muscle; or still more deeply under the muscles that are invested with an *aponeurosis*; the natural con-



sequence attending such an accident will sooner or later be a degree of elevation or tumour : which species of tumour is known by the term *Aneurysm*.

IF a true *Aneurysm* happens, (that is, a swelling arising from a weakness of all the coats which compose an arterial vessel, or from a wound or rupture of one or more of its coats, and a distension of the rest) it may often be distinguished from a tumour proceeding from any other cause by a degree of pulsation : supposing the situation of the injured vessel be superficial ; as may be evinced in recent *Aneurysms* of the humeral artery, which sometimes happen from bleeding near the bending of the elbow-joint, as well as in *Aneurysms* of the inferior parts of the superior cubital artery, the inferior cubital artery, or the anterior artery of the leg, called *Tibialis antica* ; and as may be observed to be sometimes the case too in arteries whose situations are not superficial ; to wit, in *Aneurysms* of the *Aorta ascendens*, the curvature of the *Aorta*, and the *carotids*.

THE symptom of pulsation in tumours, which take their rise from a partial wound, or from a weakness and subsequent dilatation of all the coats of an artery, is not confined

to this species of *Aneurysm*, but is frequently attendant upon false *Aneurysms*; that is, such tumours as are occasioned by extravasated arterial blood: supposing the disease be a recent one of either of the preceding vessels, or of any other arterial vessel not deeply situated; and this symptom of pulsation in false *Aneurysms* will sometimes be accompanied with a discolouration, or variegated appearance of the integuments; dependent upon the insinuation of the blood underneath them: but if the extravasation be confined under an *aponeurosis*; or if the disease has been of so long standing as to admit of the absorption of the thinner parts of the extravasated blood, or its dispersion by any other means; and if the fibrous parts of the blood which are left behind should be accumulated in considerable quantities, and acquire so compact and solid an appearance as to resemble brown macerated leather in their colour and texture, (which I have always observed to be the case in old diseases of this kind) under these circumstances, the original symptom of pulsation on the swelling, and a discolouration of the integuments for the most part become imperceptible: for which reasons

reasons the true nature of the disease must be attended with a degree of uncertainty.

IT must be acknowledged by all Surgeons, whose experience has given them opportunities of examining into these diseases, that the symptoms of pulsation, and a discolouration of the integuments from extravasated blood, are not only very often undiscoverable in old *Aneurysms*, but likewise in the most recent ones; which proves the non-existence of these symptoms to be no certain characteristics of tumours not being *aneurysmal*; and the reason why this often happens may be easily explained and readily conceived of, from observing the very deep situation of many arteries that are known to be liable to these injuries: such as the *femoral arteries*; the *arteriæ tibiales posticæ*; the *arteriæ peronæ posticæ*; and some others. Notwithstanding I have treated of pulsation on tumours, and a discolouration of the integuments, when they do exist, as being the truest marks of *Aneurysms*; yet it must not be inferred from what has been advanced, that the appearance of these symptoms are unexceptionable characteristics of tumours being *aneurysmal*; for it does happen, that mere imposthumations, or collections of matter arising  
from

from external as well as internal causes, are sometimes so immediately situated upon the heart itself; and at other times upon some of its principal arteries, as to partake in the most regular manner of their contraction and dilatation, (*systole* and *Diastole*.)

A FEW years ago I saw an instance of a boy about thirteen years of age, who had his breast bone much fractured by a fall; on this account he was admitted into *Guy's Hospital*: but not till a fortnight after the accident had happened.

UPON examination there was an evident separation of the broken parts of the bone: which were removed at some distance from each other: the intermediate space was occupied by a tumour of a considerable size; the integuments were of their natural complexion. The swelling had as regular a contraction and dilatation as the heart itself, or the *Aorta* could be supposed to have. Upon pressure the tumour receded; upon a removal of the pressure, the tumour immediately resumed its former size; all these are allowed to be distinguishing signs of a recent true *Aneurysm*. The situation and symptom of this swelling were judged sufficient reasons for considering the nature of  
the



the disease as uncertain: on which account it was left to take its own course.

THE event was, the tumour burst in about three weeks after his admission; discharged a considerable quantity of matter; and the patient did well by very superficial applications.

FROM what has been above advanced, it is plain; if these arguments can be supported by facts, that the laying down such rules for infallibly distinguishing *aneurysmal* tumours, from tumours proceeding from very different causes, must be a matter of the greatest difficulty; and as a farther proof of their uncertainty, I take the liberty of offering the following short history of a remarkable case which has lately occurred to my experience.

IN the month of *December*, 1756, J. R. aged 35, received an hurt upon and about his knee, by falling to the ground from a man's back; the accident was immediately followed by a considerable degree of lameness and pain; which were increased by walking or standing; he continued in much the same state for about six weeks after the accident; at the end of this time, the calf of the leg was attacked with an *œdematous* swelling; and in a fortnight afterwards it became so painful as to disable him  
from



from walking. The tumour continued to grow for about eight weeks, and at length extended itself so far upwards, as to effect the greatest part of the thigh: the whole of which was attended with excessive pain; but more particularly so about the knee. Thus much is related from the patient's own account.

ON the 28th of *April*, 1757, he was admitted into *Guy's Hospital* under my care; upon examination, the thigh appeared enlarged to a very great size. The tumour was uniform, and extended from the inside of the knee to within a small space of the groin; the integuments were in every part of their natural colour. Upon pressing the inside of the thigh, it appeared soft: where, a fluctuation was discoverable; but there was not the least appearance of pulsation on this or any other part of the limb. The tumour on its superior, posterior, and lateral parts, was of a stony hardness.

THE leg (which according to the patient's account) had sometime since been much swelled, did not now appear to be at all so. He was continually in great pain; and for some time past had been incapable of taking his usual rest; his appetite was bad: he was a good deal  
emaciated:

emaciated; he had a constant slow fever, which began about five weeks before his admission into the Hospital; and he appeared pale and sallow in his complexion. From the time of his being placed under my care to the end of ten days there was no apparent alteration in the swelling, nor in the symptoms attending it. In expectation therefore of affording him that relief, which I thought could by no other means be given, I judged it adviseable to open the tumour; which I did by making an incision into its most prominent part; upon which there immediately gushed out a large stream of thin florid blood; and at this instant discovered to me the true state of that disease, which till now could not be ascertained by any peculiar symptom, distinguishable by the touch, or perceptible to the eye; seeing this, I immediately filled up the wound with lint and tow, and proceeded in as expeditious a manner as possible to apply a tight bandage upon the thigh near to the groin; and lest this might accidentally break, I applied a second ligature a little below the first, and proceeded to amputate the limb upon the spot: during the operation, the patient fainted; but he soon came to himself again; and without any bad symptom,

symptom, gradually recovered his health, strength, appetite, and rest; and is now in good health.

UPON a dissection of the thigh and leg, I discovered the following appearances. A considerable part of the fleshy portions of two of the extensor muscles of the leg; to wit, the *vastus internus* and *crureus*, with the subjacent *periosteum*, were destroyed. Four of those muscles whose uses are to bend the leg, and which compose the internal and external hamstrings; to wit, the *gracilis*, *semitendinosus*, *semimembranosus*, and *biceps tibiæ*, together with that adductor and flexor muscle of the leg, called *sartorius*, were removed at a considerable distance from the inferior part of the thigh-bone, and from the upper parts of the *tibia* and *fibula*; by which means a large bed was formed for containing the extravasation; which consisted in part of a fluid, and in part of a coagulated blood; by much the greatest portion of the coagulated blood was firm; and had acquired the texture and appearance of brown macerated leather. The several muscles I have mentioned had a livid and putrid appearance. The *os femoris* was carious on its anterior and posterior parts: and for the space of several inches above the condyles

condyles of that bone, with the course of the *linea aspera*, as well as on the convex or anterior part of it, there were many *exostoses*.

THE capsular ligament of the knee-joint was much thickened: and contained about two ounces of a yellow and viscid synovia.

THE femoral artery on its inferior part, some distance above its division into the *tibialis antica* and *postica* was diseased: which disease extended four inches upwards. The coats of the artery were considerably thickened and lacerated longitudinally: the smallest diameter of its cavity, in the diseased part, was two inches and one quarter; the largest diameter was two inches and one half. That part of the artery below the disease was somewhat smaller than the vessel naturally is.

SINCE the above-related case of the *aneurysm* of the femoral artery, I have met with a second instance of the like disease, where the circumstances that attended the tumour differed so little from those of *J. R.* that I think it needless to say any more upon the subject, than that upon inspecting the thigh, after the amputation of the limb, the bone was found more diseased, and the artery more torn.

N. B.



N. B. Nov. 1775, a third case fimilar to the preceding I had an opportunity of seeing ; where the operation for the *aneurysm* was performed by tying the artery above the diseased part only. In about five days after the operation, an *hæmorrhage* ensued : and on the 7th day the patient died : from the 2d day after the operation, the leg began to mortify, and continued so to do till his death : upon opening the thigh and inspecting the parts, the lower part of the *os femoris* was found to be carious, and the tendinous parts much diseased.

R E M A R K.

PREVIOUS to the amputation of the limb in the second instance, I made an incision into the tumour, as described in the case of *J. R.* p. 156 : but before I did so, I applied the tourniquet and ligature to the upper part of the femoral artery, to prevent any bad consequences from the sudden effusion of blood that I judged was likely to happen from the opening of the swelling ; which precaution I would advise always to be taken in the like operation upon considerable tumours of the

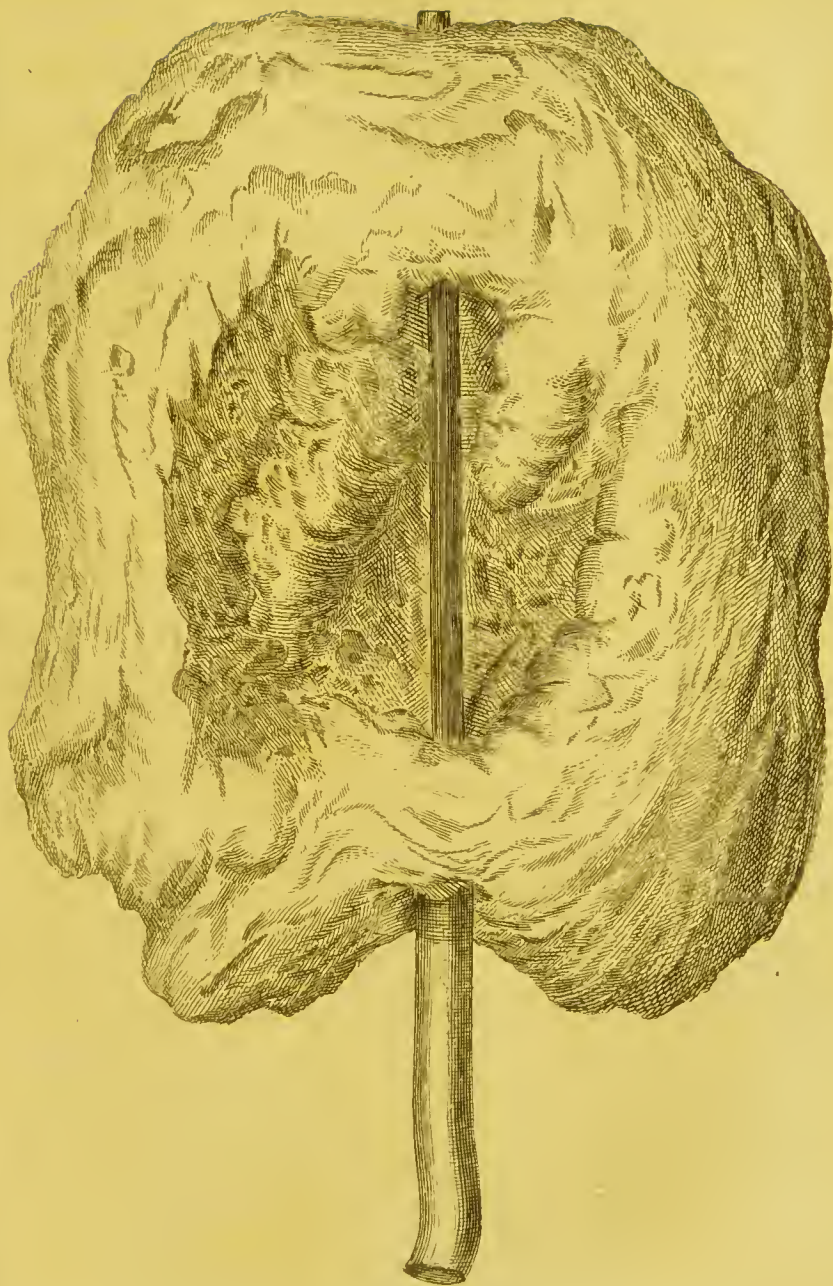
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internal



internal or posterior part of the thigh, or arm, when there is reason to suspect that the tumour proceeds from blood; and this is more strongly to be recommended, as the compression that is made with the ligature gives very little pain; and cannot by any means be injurious; supposing the disease be not an *aneurysm*.

I VERY lately saw an instance of a false *aneurysm* of the inferior portion of the femoral artery, where the integuments burst: in consequence of which, the patient lost so great a quantity of blood before any assistance could be given him, that he died in a few hours afterwards: from hence we may learn the necessity for taking the greatest care in diseases of this kind; and how cautious we ought to be in guarding against a possibility of the like accident, by performing a timely operation. In all the instances I have seen of *aneurysms* in the thigh or leg, where the disease has been of many weeks standing, the bone or bones have appeared so much affected as to render the amputation of the limb necessary to the saving of the patient's life. The probable way of accounting for the caries of the bone, and the disease of the joint in these cases

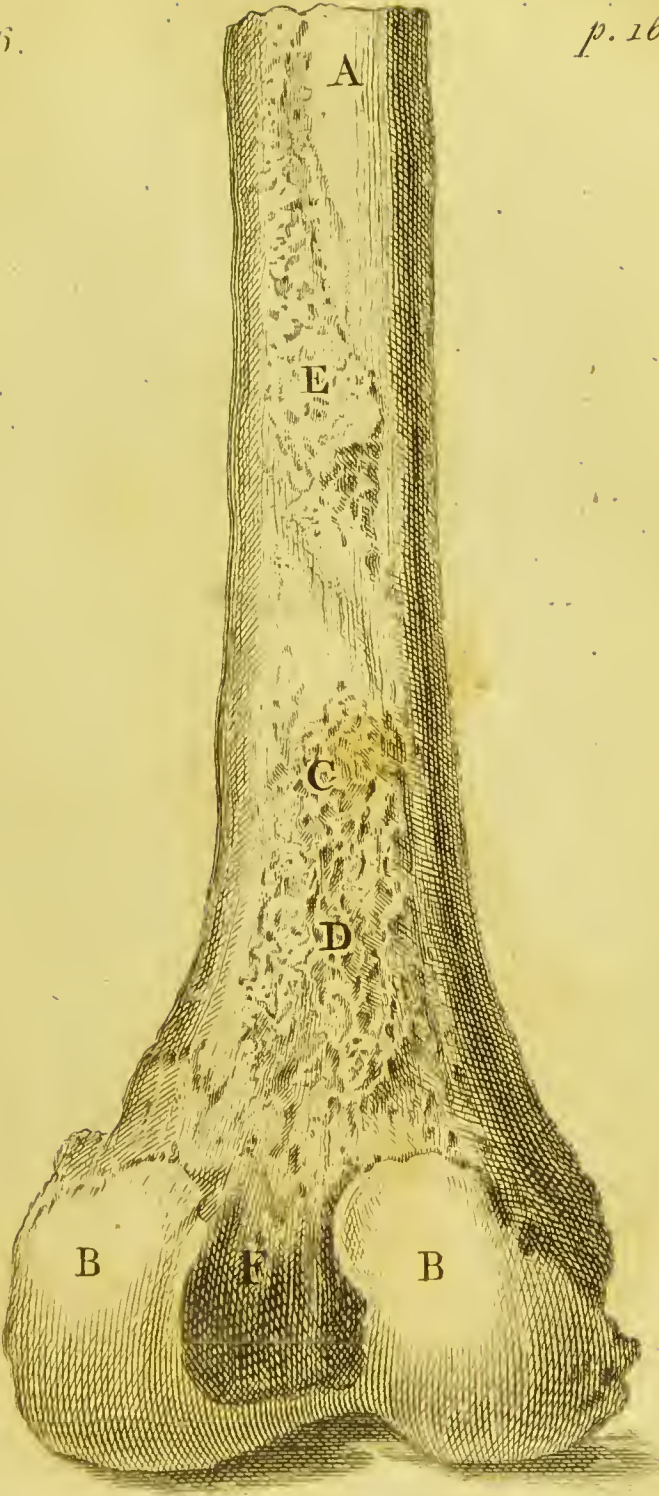












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cases is from the obstruction the blood meets with in the smaller arteries of the adjacent parts.

CASES XXVI. and XXVII.

*Two remarkable Cases of Ganglions, where the Operations were performed with Success.*

**G**ANGLIONS, or tumours formed upon the *tendinous* and *ligamentous* parts of the extremities, are diseases sufficiently known to every Surgeon of experience : and have been treated of by many writers under the head of encysted tumours.

THE parts most frequently attacked with this kind of swelling are the hands and feet ; but there are instances of these tumours appearing upon many other parts of the body ; an extraordinary example of which I was some time ago consulted in, where the tumour possessed the whole back part of the neck.

THESE tumours sometimes take their rise from a strain : and at other times they happen without any previous accident. Unless they disperse of themselves, or are removed by art, when recent, they frequently increase to



a considerable size, proving very inconvenient, by depriving the part of its strength and motion.

THE methods prescribed for their cure are various ; but those that are said to have been found most effectual, are constant pressure and sudden blows ; which sometimes may have succeeded. At other times the tumour has been known to disappear for a time only, and at length has returned ; owing without doubt to the cyst being left behind ; which is known to be frequently the case in every other species of encysted tumour, where the bag is not sufficiently destroyed in the operation, or by future applications.

THE greatest dircutients which I have experienced in these tumours are saponaceous liniments mixed with *opium* ; and plaisters composed of soap and mercury ; which in many instances have fully answered my purpose : at other times the *unguentum cæruleum* with camphor will be found successful.

BUT as the instances are not uncommon, where all attempts to disperse them prove ineffectual, and the parts become disabled both from the size and situation of the tumour, the Surgeon is at length obliged to have recourse

course to the knife, or the caustic, as a radical cure.

I KNOW there are some who object to this operation on account of the danger attending a wound of the subjacent tendon, or ligament; imagining that such an accident would probably be attended with the worst of consequences. But this objection can be of no great weight; since it is always in the power of a skilful and steady operator to avoid this accident, by cutting away only a part of the cyst, and leaving the rest to digest out with the future dressings; which it will most certainly do, if the outward wound be made sufficiently large, to admit of future dressings to the internal and inferior part of the wound.

BUT supposing it should happen that the tendon, or ligament, or both, should be wounded in the operation, the consequence will not probably be so bad as is apprehended, since every day's experience proves, that accidental wounds of these parts are known to do well with proper treatment; and as some proof of the validity of this *hypothesis*, the two following cases are related. In both of which

it was found absolutely necessary to divide a considerable ligament, before the operation could properly and effectually be performed.

*A. M.* a young woman 19 years of age, in the year 1745, strained her wrist by a fall. The accident was immediately followed with great pain, a weakness, and swelling of the whole hand ; which, notwithstanding the proper methods used for her relief, continued much in the same state till 1749 ; when she perceived a small distinct tumour to arise in the inner and lower part of her wrist : this in a few days increased to so great a degree, as rendered her incapable of shutting her hand, or moving her fingers.

On the 21st of *April* 1750, she applied to me for relief. Upon examination I discovered a fluid in the tumour, which extended to the distance of about an inch above the *ligamentum transversale carpi* ; and to about half an inch below it ; upon pressure the contents of the tumour appeared to pass underneath this ligament.

I DETERMINED upon the operation, which I performed in the following manner. Her hand being properly placed and secured upon  
a table

a table covered with a double blanket ; I began my incision a little above the upper extent of the tumour, and continued it through the integuments to a little beyond the lower extent of the tumour, which I carefully dissected up on each side. This gave me an opportunity of discovering its exact situation : which I found to be under the tendons of the *flexor carpi ulnaris*, and *palmaris longus* muscles. Both of which were considerably lifted up, and removed from their natural situation, by the subjacent tumour. The tumour likewise extended itself under the *ligamentum transversale carpi* ; which there was a necessity of dividing, before I could have an opportunity of dissecting the tumour from its basis. The upper part of the cyst was strongly attached to the inferior parts of the tendons of the *flexor carpi ulnaris*, and *palmaris longus* muscles. The lower part of the cyst adhered to the tendons of the *perforans* and *perforatus* muscles ; from whence I dissected the whole away.

THE contents of the tumour were a composition of a *gelatinous* and *steatomatous* substance.

THE patient continued in a good deal of pain for four days after the operation ; at the end of that time she grew easy, and so continued to the finishing of the cure: which was perfected in six weeks without any considerable inflammation, or the least abscess; and she was restored to the perfect use of her hand.

THE other case was so like that I have just now described, that I look upon it as unnecessary to give a particular account of it.

THE operation was performed in the same manner ; and the cure was attended with no other difference in its progress than this; the patient had a small abscess which arose on the middle and anterior part of the forearm, which was opened by incision, and did well with very little trouble. The use of the hand was perfectly recovered in this, as well as in the preceding case.

## C A S E   XXVIII.

*Of a Ganglion situated upon the Fore-finger.*

C. P. a very lusty woman, aged 50, some years ago perceived a swelling to arise upon the anterior part of her fore-finger, which



which at length increased to the size of a pigeon's egg. The tumour was now become so troublesome from its size and situation, as to deprive her of the use of her finger, and to render it quite incapable of motion.

THE part was not attended with much pain : but from the circumstance of the finger being rendered useless, she was desirous of having the tumour removed.

SHE had asked the advice of several surgeons who refused to undertake the operation.

AT length she applied to me : I saw no objection to the operation, and accordingly proceeded to the extirpation of the tumour.

ITS contents were intirely *gelatinous*, and were contained under the *capsula* of the tendons of the flexor muscles of the index or fore-finger : which had formed the cyst.

THERE was neither much difficulty, nor pain in the operation ; and the patient did well in a short time, without the least interruption or bad symptom. She now enjoys the perfect use of her finger.

BUT notwithstanding the favourable circumstances that attended these several operations, I would not have it inferred from what

I have

I have said, that inflammations and abscesses never happen in consequence of the operation. I confess I have known them to occur several times: but I never knew an instance of their terminating otherwise than well.

## R E M A R K.

FOR the manner of performing this operation, see the methods that were pursued in the case of *R S.* p. 108.

CHAP. VI.

Of the EMPYEMA, (Εμπυημα).

THE term *Empyema*, according to the true Etymology of the word, signifies a collection of matter that is deposited in any part of the body whatsoever ; but when Surgeons treat of the operation for the *Empyema*, they mean to express an operation performed upon either or both cavities of the *thorax* ; by which an opening is made through the integuments; the intercostal muscles and pleura: in order to evacuate any kind of fluid that is confined, and lies floating in the *thorax*; which by its situation, weight, and pressure, is known to impede the actions of the organs of respiration, in a degree proportionable to the greater or less quantity of extravasated fluid that is there confined.

THERE are several kinds of extravasated fluids which are said to be capable of producing this disease : such as water, matter, blood, chyle, and aliment : but whoever reflects upon the situations and uses of the *æso-phagus* and *ductus thoracicus*, I believe, will be  
of

of opinion, that an impediment in the active, or passive organs of respiration, proceeding from a quantity of aliment or chyle, discharged into the *thorax*, occasioned by a wound of the *œsophagus*, or *ductus thoracicus*, can never be attended with such circumstances as will render the operation for the *Empiema* necessary; and I am so well convinced of the futility of this supposition (although it be advanced by a modern French author of the greatest character in Surgery) that I think it quite needless to advance any serious reasons or arguments in opposition to it.

As to an extravasation of blood in the *Thorax*, this may possibly happen in such a degree from a wound of one of the intercostal arteries, or some other neighbouring vessel of the *Thorax*, as may render an opening into the cavity adviseable; but under such circumstances, no other operation will probably be found necessary than the enlarging or dilating the wound that has been made by the point of a sword, a knife, or any such instrument, or give issue to that blood which has been discharged inwardly from this accident; and which at length is become coagulated, and pent up in the *Thorax*; but this dilatation of the wound must not be put in execution, till  
such

such symptoms occur as indicate a necessity for so doing, which symptoms I believe have very rarely been known to happen; and I profess, that it has not occurred to me to see one instance of such a case; though I think it very possible.

IF water be extravasated in large quantities; and that water be confined, and deposited in the *Thorax*, the making an opening into the cavity for its evacuation is undoubtedly advisable: provided the disease be confined to the *thorax*; which case has more frequently been known to occur, than to be complicated with an *anasarca*, of any part of the body, or an *ascites* of the abdomen.

THE circumstance of a collection of water in this part of the body is not often known to happen in so great a degree as to require the performance of an operation: nevertheless, it is certain this disease has sometimes occurred to men of experience; an instance of which, the celebrated Monsieur *Morand* of *Paris* has obliged the world with in the second volume of the *Memoirs* of the *Royal Academy* of Surgery: the substance of this extraordinary fact is expressed nearly in the following words.

AN ecclesiastic, aged 22, was attacked with a fever; a few days afterwards, the measles  
appeared



appeared upon him attended with a profuse perspiration. On a sudden the perspiration ceased, and the eruption disappeared; in consequence of which, the fever encreased with restlessness, a pain in the head, the neck, and left side, accompanied with an *œdematous* tumour, a difficulty in breathing, and pain in speaking, or spitting. He could not rest but by lying on his back: his eyes were hollow: he was weak and greatly dispirited. Monsieur *Morand* made a puncture with a Trocar into the diseased cavity of the *thorax*; from whence were discharged near six pints of water: the last drops of water were followed with a small discharge of matter. The patient was instantly relieved from his pain: but in seven days after this operation, the disease returned almost as bad as before. For this reason, Monsieur *Morand* performed the operation a second time upon the same cavity of the *thorax*: not by puncture, but by incision: by this operation, he evacuated five pints of water; the water was followed with a discharge of matter, something greater in quantity than before.

THE disease did not return after the second operation; but the patient fell insensibly into

an Atrophy : however, by living upon a milk diet, he gradually recovered : and at length was quite restored to his health.

THIS instance proves to us the possibility of an *ascites* of the *thorax* without a dropsy of any other part of the body, as well as the probability of a cure by the operation : and I am perfectly convinced from my own experience, that a collection of water in one or both cavities of the *thorax* is a disease not so uncommon as is generally supposed ; having several times discovered great quantities of lymph lying loosely in the *thorax* of some of those subjects who have come under my inspection after their death.

COLLECTIONS of water in the cavities of the *thorax* and *abdomen* have been supposed curable by the efforts of nature : so have collections of matter : but the instances of these effects produced by the power of the absorbent vessels, and the evacuation of the fluids so taken up, by spitting, by urine, by stool, or otherwise, are very rare ; and should never be trusted to when the Surgeon is assured of the true nature of the disease.

COLLECTIONS of matter deposited, and lying loosely in the *thorax* is a disease that more frequently

frequently occurs than collections of extravasated water, if I may judge from my own experience.

IMPOSTHUMATIONS of this part of the body proceed from a variety of causes: and when the case is not attended with any great affection of the lungs or the liver, the making an opening into the *thorax* to evacuate the matter, often proves successful: the operation therefore should be put in practice as soon as may be, to prevent the more noble parts from suffering from the quantity and quality of the extravasation. As the symptoms which attend the *Empiema*; the method of performing the operation; and the manner of treating the wound are circumstantially described in the course of the following cases, I have thought it unnecessary to enlarge here upon these particulars.

### C A S E   X X I X.

*Of an Empiema, where the Operation was unsuccessfully performed.*

**N**OVEMBER 1750, S. K. aged 37, in May last, was suddenly seized with a pleuritic pain in his right side, attended with a fever  
and

and difficulty in breathing ; for which he put himself under the care of a neighbouring Aapothecary ; who bled him occasionally, and at the same time administered such internal medicines, and topical applications to the part as were thought proper : but without effect. The patient continued much in the same state till *July* followiug ; when he was admitted into the Hospital under the care of the Physician ; who prescribed for him near four months, but without much benefit. On the first of *November* following, he was attacked with an uncommon difficulty of breathing, and pain in his right side ; for which he was blooded ; this gave him some relief. On the day after, I was consulted ; upon learning his symptoms, and upon inquiring into farther particulars, I discovered the right side of the *thorax* to be somewhat larger than the left, and the integuments appeared a little thickened : but without the least tendency to discolouration, softness, or any appearance of a fluctuation. The patient was incapable of lying on his left side without suffering excessive pain ; which he described as extending from the middle of the breast-bone to the back. This was perceivably attended with so great a difficulty of breathing as seemed to threaten suffocation. The patient

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could



could lie on his right side without any considerable inconvenience ; but he was most easy when lying on his back ; he never had been troubled with a cough till within the last month ; nor had he ever perceived the least discharge of matter, either by spitting, or otherwise. His pulse was quick and low, his countenance was pallid, he had no appetite, and complained of great restlessness. It is remarkable, that the patient never remembered to have had any rigour : which is a circumstance that commonly attends the formation of matter. Upon the appearance of the foregoing symptoms, I thought proper to advise the operation for the *Empiema*, which he readily assented to ; and I performed it on the spot in the following manner : when the patient was properly situated and secured, I began by making an incision of about two inches and a half long with the course of the ribs, upon the part where they form their greatest convexity, and betwixt the sixth and seventh ribs : which incision was continued into the cavity of the *thorax* ; from whence there issued three pints of a thick fœtid matter ; from this instant, he was greatly relieved. The discharge was very considerable for the five first days after the operation : when it began



began to decrease. From the moment of the operation, the patient was capable of lying on either side, or of sitting upright without the least inconvenience; and he continued to grow better till the first of *December* following: when the discharge increased, and continued in great quantities till his death: which happened in about seven weeks after the operation. Upon opening the body, I found the *diaphragm* destroyed quite through; and the upper part of the Liver had suffered greatly from the incumbent matter. The lungs lay loose in the cavity of the *thorax*, and were not in the least ulcerated, or apparently diseased.

*N. B.* in the operation, the incision was made nearer to the superior edge of the lower rib, than to the inferior edge of the upper, which prevented the risk of wounding the intercostal artery: which should always be avoided.

## CASE XXX.

*Two Cases of the Operation for the Empiema, successfully performed, and read before the Royal Society the 19th of March 1752, and 28th of June 1753.*

## CASE I.

**T.** H. aged 27, was admitted into the Hospital on the 19th of *December* 1751, on account of a pain in his right side, and cough, which he had laboured under for three weeks; the patient was immediately put under the physician's care; but notwithstanding all proper methods used for his relief, the disorder increased till the 13th of *January* following, when I was consulted.

UPON enquiry, I found him afflicted with the following symptoms; a quick low pulse; frequent cough, and difficulty of breathing: which last symptom was much increased upon lying on his left side, or upon sitting upright. He appeared greatly emaciated: his countenance was very pallid, or fallow. Upon further enquiry, I discovered that the right side of the *thorax* was somewhat enlarged; the integuments

integuments were visibly thickened: but without the least discolouration, or perceivable fluctuation. However, being persuaded from the foregoing symptoms, that there probably was an extravasated fluid underneath; I advised the operation; which the patient consented to, and I performed it in the following manner.

THE patient being conveniently seated, I made an incision of about three inches long with a round-edged knife, between the tenth and eleventh ribs, counting from above: and at about four inches distance from the *vertebræ*; the direction of the incision was agreeable to the course of the ribs: and by its being made nearer to the superior edge of the eleventh rib, than to the inferior edge of the tenth, the intercostal artery by that means escaped being wounded; upon dividing the intercostal muscles and *pleura*, very near twenty ounces of matter were discharged. After the matter was evacuated, I introduced my finger through the wound into the cavity of the *thorax*, but found no adhesion of the lungs to the *pleura*; from whence I am inclined to conjecture, that this abscess was originally formed in the cellular membrane of the *pleura*,

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which

which had at length made its way into the cavity of the *thorax*.

W H A T seems to corroborate this conjecture is, that the violent symptoms which happened to the patient upon lying on the sound side, or upon sitting upright, did not occur till within a week before his application to me. From the moment the matter was discharged, he found very great relief; his respiration became quiet: his fever and cough gradually abated; till in about six weeks he perfectly recovered, and was soon after dismissed the Hospital. The discharge from the wound continued in considerable quantities for the first fortnight; during that time, the wound was kept properly open with tents; but when the discharge was no more than what might be expected from a superficial wound of the same size, all tents were discontinued, and superficial applications only made use of.



CASE XXXI.

*On the 19th of March 1752, I did myself the Honour of communicating to the Royal Society the Case of T. H. on whom I had performed the Operation for the Empiema with Success. Since then I have performed the same Operation a second Time with equal Benefit; and therefore presume to lay this Case likewise before the Society, as a farther Proof of its Usefulness under the like Circumstances.*

CASE 2.

**J.** C. aged 17 Years, was admitted into Guy's Hospital on the 10th of May 1753, on account of a complaint in his chest, which he had laboured under for three or four weeks.

His symptoms were a continual pain in his left side, a difficulty in breathing, and an inability of lying on his right side, or of sitting upright, without greatly increasing his complaints; his pulse was quick and low; he had a short cough; was a good deal emaciated; and appeared fallow in his complexion.



UPON examination, I perceived a small tumour situated on the anterior part of the *thorax*, obliquely on the left side of the extremity of the sternum, or breast-bone. There was not the least discolouration of the integuments. Upon pressing the tumour, his pain, and difficulty of breathing were encreased : and there appeared something like a fluctuation under my fingers. The patient had never had any rigour : which is a symptom generally attending the formation of matter ; but from experience I have found, that the want of this symptom is no proof to the contrary.

FROM the foregoing circumstances and symptoms, I made no doubt of the propriety of the operation : which I performed in the following manner.

THE patient being properly situated and secured, I began with making an incision of about two inches long through the integuments and tendinous expansion of the *oblique muscles* of the *abdomen*, upon the most prominent part of the tumour ; I then proceeded to the making a second incision of an equal length with the first, transversely through the upper part of the *rectus muscle* (which had a perfect healthy appearance) directing my  
knife

knife forward betwixt the *cartilaginous* portions of the seventh and eighth ribs, and the extremity of the *sternum*, into the cavity of the *thorax*; the incision being made, a thick clotted matter, to the quantity of twenty-three ounces and upwards was discharged.

As soon as the opening was made into the cavity, and the fluid began to be evacuated (which was by leaps) the patient expressed a painful and uncommon kind of sensation: which he compared to a weight being suddenly taken from his heart. Hence I conjecture, that this part had suffered so great a compression, as to have been for some time incapable of performing its natural actions; but, upon the fluid being set at liberty, the ventricles of the heart probably became immediately more dilated, than they had been for some time before, on account of the weight they had sustained. After the whole of the matter was discharged, I introduced the fore-finger of my right hand into the cavity; with which I evidently felt the lungs (quite loose and free from adhesion) the *mediastinum*, and superior part of the *diaphragm*: which last part had been pressed considerably lower than its natural situation, by the weight  
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of the incumbent matter ; from hence it undoubtedly appeared, that this great quantity of fluid had been contained in the *thorax*. After the whole of the matter was discharged, I introduced a linen tent, properly secured, with a needle and thread passed through it, into the cavity : the tent was continued to be introduced every day for about the space of three weeks : now and then, as occasion required, making use of the prepared sponge-tent. The discharge was considerable for the first week ; when it began to decrease gradually ; till at the end of three weeks there was no discharge at all. From this time superficial applications only were made use of ; at the end of five weeks the patient was perfectly well in all respects ; and had recovered his former plumpness and healthy appearance.

I MUST observe, that about two years ago he received a violent blow on his left side by a fall, for which he had little or no care taken of him. The patient had ever since this accident, at different times, been afflicted with some complaints in his side, but not constantly ; nor have they ever been so bad as to prevent his acting in his business as a  
sailor,

sailor, till within a few weeks before he applied to me.

R E M A R K.

FROM the circumstances, and symptoms attending the three preceding cases, I think it could hardly be doubted what the nature of the disease was; and as the lungs, *diaphragm*, and *intercostal muscles* must not only be impeded in their actions, in proportion to the quantity of extravasated fluid, which is confined in the cavity of the *thorax*; but must also be in great danger of ulceration or consumption, from the quality and pressure of the incumbent matter; I look upon the operation in all cases of this kind, to be absolutely and immediately adviseable; and that it should not be deferred in expectation of the fluid being absorbed into the circulation; and evacuated by urine, by stool, or by spitting: since it must be acknowledged, that the instances are very rare where these events have been successfully brought about; and at the same time, that the cases are numerous where death has ensued, in consequence probably of the operation being deferred too long, or totally neglected,

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THE operation for the *Empiema* is neither very difficult nor dangerous: and I conclude, there can be no better arguments advanced in support of its safety and usefulness, when undertaken in time, than the success that attended its performance in two of the three preceding cases; in which it has been already observed, that the diseases were only of a few weeks standing: in the third instance, where it has likewise been observed, that the operation was not successful, I think this want of success might with some reason be attributed to the injury which had been communicated to the *diaphragm*, and superior part of the liver, in consequence of the long confinement and quality of the matter; or it may possibly happen, that the matter had been originally formed in one or both of these parts, and discharged itself into the cavity of the *thorax*; which, for want of being evacuated in time, had at length increased the disease, and destroyed the patient by the largeness of the ulceration, and quantity of the discharge.



CASE XXXII.

*A remarkable Case of an Empiema.*

**M.** E. aged 30 years, on the 13th of March 1759, was admitted into Guy's Hospital, with a remarkable complaint in his chest, which attacked him in the month of August, 1758, with the symptoms of a pleurisy.

UPON inspection it appeared, that the left side of the *thorax* was greatly enlarged and prodigiously distended: the pectoral muscle was somewhat raised up: on pressure it felt soft, and readily gave way; upon a removal of the pressure, the integuments resumed their former appearance, no marks of impression remaining on this, or any other part of the *thorax*: so as to constitute the characteristic of an *œdematous* swelling.

THE Spaces betwixt the ninth and tenth, and betwixt the tenth and eleventh ribs, (counting from above,) were visibly enlarged and somewhat elevated: they felt soft, and yielded to the fingers: but were not at all inflamed, or otherwise discoloured. Upon examination

amination I discovered a fluctuation in both these parts. The general symptoms that attended this case were similar to those arising from all considerable collections of fluids deposited in either of the cavities of the *thorax*. The patient had a continual flow fever: a short cough; but without the least expectoration of matter: great difficulty in respiration, particularly in the acts of expiration: he was incapable of lying down on the right side without very great uneasiness; he was much emaciated, and his countenance was uniformly fallow; he did not complain of so much pain, or so great a difficulty in breathing when in an erect posture, as I have sometimes observed in diseases of this kind, even where the quantity of extravasated fluid has been much less: but at the same time I must acknowledge, no fair inference could be deduced from hence, because of the peculiar position the diseased side was put in, when the poor man sat down or stood up; either of which he was incapable of doing without being supported. The left side of the *thorax* inclined forwards, and protuberated in a very peculiar manner, so as to give the head and trunk an horizontal posture; in which position  
of

of the body the weight of the contained fluid was most certainly in part prevented from pressing so forcibly upon the left portion of the *diaphragm*, the *mediastinum*, and right portion of the lungs, as it must necessarily have done in a more erect position of the body : he had one symptom which I had never before observed in patients labouring under this complaint ; that is, he was incapable of lying on his back without bringing on very alarming threats of suffocation : but he did not remember ever to have heard any noise or rattling of the pus upon motion. He could lie most conveniently upon his left side : but even that posture was of late become very painful to him : in short, he could find no tolerable posture to put his body into, but that of inclining it considerably forwards ; which (I have already observed) he was under a necessity of doing to enable him to draw his breath : and, I dare venture to say, that upon attending to the subsequent part of the history of this poor mortal's case, the reason why such effects should be produced from such a cause will very readily occur to those who have a moderate degree of knowledge of the formation and uses of these parts of the human body : upon  
making

making an incision upon the most prominent part of the space betwixt the tenth and eleventh rib, into the cavity of the *thorax* of the left side, at least eight *Winchester* quarts of a thin yellow matter, not at all foetid, was discharged upon the spot in a full stream : the matter issued through the wound by leaps ; and was projected at the distance of two yards and upwards from the patient's body. The patient did not faint during the operation, nor afterwards ; but from that moment he grew easy : his symptoms abated : he slept well at night ; and the next day he had no bad symptoms, excepting that his difficulty in breathing was not quite removed ; this, indeed, could not reasonably be expected : considering the long disuse and extension which the *diaphragm*, the intercostal muscles, and the rest of the muscles of respiration had undergone from the pressure and weight of the confined matter, joined to the injury which the lungs themselves had sustained : the patient continued with very little alteration till the fourth day : when his respiration became worse, accompanied with bad nights, a quick pulse, a great discharge of foetid matter from the wound, and a flushing in his face. These symptoms remained  
till



till the ninth. That day his breathing was better, his pulse became more calm, the flushings in his face disappeared; but the discharge was considerable in quantity, and he complained of a want of appetite; which, till now, had been tolerably good ever since the operation. On the tenth day his difficulty of breathing returned; the discharge was very great and offensive; he had very little sleep last night; in short, he seems greatly upon the decline; eleventh, twelfth, and thirteenth days he continued much as on the tenth day; fourteenth and fifteenth days he has had more sleep than usual, his appetite very bad, cough frequent and troublesome, discharge very thin and considerable in quantity. Upon exerting his powers in the act of expiration to discharge the matter from the cavity, there appeared an eminence betwixt the seventh and eighth ribs (counting from above) on the anterior lateral part of the *thorax*, which was very tender; but upon his ceasing to exert himself the swelling disappeared; sixteenth and seventeenth days his cough very troublesome, the discharge from the wound was great, the matter very thin and fœtid, he gets very little sleep,

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his



his pulse quick and hard ; his tongue dry and parched ; in short, to all appearance, he seemed to have a very short time to live ; but notwithstanding these threatening symptoms, he very unexpectedly survived till the 10th of *June* following, exactly twelve weeks from the time of his undergoing the first operation. In the middle of the month of *April* next preceding his death, he thought himself much better than he had been for many days : his discharge at this time was much lessened, but his pulse was very weak and fluttering.

ABOUT three weeks before the patient's death, a second opening was made by incision betwixt the eleventh and twelfth ribs by my colleague, the late Mr. *Way*, under whose immediate care this poor man was from the day of his admission into the Hospital, and who treated him with the greatest humanity and judgment : three days before the patient's decease, the swelling betwixt the seventh and eighth ribs opened externally of itself, and discharged at least a pint of matter that was exceedingly offensive.

UPON opening the body, the following particulars were discovered ; to wit, the right portion

tion of the lungs was greatly ulcerated on its superior part, where it adhered firmly to the *pleura*; on the inferior part of the cavity the lungs adhered to the *diaphragm*; the lobes of the lungs on this side were not so much wasted as I expected they would have been, from the great degree of pressure they had so long sustained from the prodigious quantity of matter that was confined in the opposite cavity of the *thorax*; nor was there any extravasation in the right cavity.

THE lobes of the lungs on the left side were almost entirely destroyed; in this cavity there was near a quart of fœtid matter: the whole of its internal surface was ulcerated, and the two inferior ribs were carious in the neighbourhood of the second opening; in every other part they were sound: so was the *sternum*.

THE *pericardium* and heart appeared in their natural state. The injury done to the internal surface of the left cavity of the *thorax* was so great, as to have destroyed almost the whole of the intercostal muscles on that side of the trunk.

N. B. It may be worth remarking, that the patient did not at any time suffer the least

inconvenience from the pressure of the external air, which entered into the cavity of the *thorax* through the incisions, as has been said by authors to have happened in a great degree in the like cases ; but as that effect was not produced in this, or any other instance of the like kind, which has come under my inspection, I am inclined to conjecture, that the bad effects of the pressure of the external air, when admitted through an opening made into the cavity of the *thorax*, is such an inconvenience as may rather be supposed to be likely to happen, than has been really known often to happen: the act of respiration having never been in the least suspended, although the openings made into the cavity have been very large, and the time taken for dressing the patient (sometimes once, sometimes twice a day) has been very considerable ; but on the contrary, at every dressing I have observed the patient has breathed with greater freedom and ease than he could do before the performance of this operation ; or even for some hours before the dressings were renewed. As the matter in this disease lies loosely in the cavity of the *thorax*, there is no greater danger of wounding the

the

the lungs in this operation, than there is of wounding the intestines or *omentum* in tapping the abdomen in the *ascites*; and if the method be taken, which I have recommended for making the incision through the intercostal muscles, there will be no danger of wounding the intercostal artery; which is a circumstance much dreaded by some practitioners, but with no great reason; for was this to happen it would probably not be attended with any bad consequences, as the bleeding might very readily be stopped by pressure, or otherwise: however this violence done to the artery should always be avoided; as such a matter must become more or less troublesome to the operator.



## C A S E   XXXIII.

*An Account of a Collection of Fluid loosely deposited in the right Cavity of the Thorax ; which proved Mortal from the Irresolution and Obstinacy of the Patient : Whose Death possibly might not have happened from that Cause ; had the Disease been treated by Operation.*

## I N T R O D U C T I O N.

**T**H E operation for the *Empiema* is not only an adviseable method to be put in execution for the relief of the individual, who labours under many distressful, and dangerous symptoms, arising from a collection of fluid lying loosely in one, or both cavities of the *thorax* ; but it is an operation, in some instances, indispensibly necessary to the preservation of life : since without such assistance, the patient languishes and dies : there being under certain stages of this disease, no relief of consequence to be afforded to the distressed ; but by the hand of the experienced in Anatomy and Surgery.

BESIDES



BESIDES the several histories of the *Empiema*, which at different times, I have ventured to lay before the *Royal Society* ; as well as before the public in general ; I am induced, from the flattering reception which my Memoirs have hitherto been favoured with, to publish the following Narrative of this disease : for the removal of which ; although no operation was performed ; and the death of the young man was the immediate consequence of the *malady* ; nevertheless, I am flattered with the idea, that a bare recital of the symptoms which occurred in the following instance, may in some degree prove useful to the less experienced.

UPON this presumption therefore, I am led to a publication of the subsequent fact.

#### CASE XXXIV.

*A.* B. a young man, four or five and twenty years old, applied to me for my advise and assistance, on account of a disease in his chest, that was attended with distressful and alarming sensations.

IN this instance, the symptoms that appeared were as follow :

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I. A.

I. A fallow and pallid complexion.

II. A thin and an emaciated habit of body.

III. A difficulty in respiration ; which, upon walking up stairs, was much encreased.

IV. AN inability of lying down on his left side, without incurring severe pain in that part of the *thorax*, which corresponds with the course of the *mediastinum*.

V. THE pulse was quick, low, and irregular.

VI. UPON pressure, the man complained of a tendernefs betwixt the sixth and seventh ribs.

VII. UPON his suddenly moving the body forwards ; with much attention, I could hear a rattling, and gurgling of a fluid which fluctuated in the *thorax*.

VIII. THE patient had a cough.

UNDER these circumstances he took leave of me ; soon after which he died.

## O B S E R V A T I O N.

FROM the nicest enquiry I was capable of making ; the integuments of the *thorax* did not appear to be œdomatous, nor thickened, nor prominent, nor in any degree changed from their natural state.

NEVER-

NEVERTHELESS, from the symptoms accompanying this disease, I had no doubt of the nature of the complaint: and in my own mind, I was fully convinced of what ought to have been done for the relief of the poor man: but as he would not submit to what was thought adviseable, matters were now left to take their chance: the patient determining to lose his life, rather than to submit to an operation.

SIGNOR *Marchettis*, a learned and skillful professor of Anatomy and Surgery, at *Padua*, has obliged the world with several cases similar to the preceding: and which were attended with symptoms to the full as unfavourable as that, which I have just now mentioned.

IN *Marchettis's* patients, an opening by incision was made betwixt the fifth and sixth ribs: thus the fluid was evacuated; and by such means several of *Marchettis's* patients were restored to health.

SEE *Marchettis's* Observations in Physic and Surgery, published in *London*, anno 1729.

ABOUT 19 years since, I performed the operation of the *Empiema* upon a lady 22 years old: a considerable quantity of matter was discharged through the wound, that was made by incision betwixt the fifth and sixth ribs:

ribs: every thing went well on from that time: and the patient was perfectly recovered.

IN about two years after I left this lady; she contracted matrimony: she has had two children; who are now living with their mother. The eldest child is about 16 or 17 years old.

FOR a long time this young woman had been under the care of a Physician of distinguished eminence in *London*: who, after having put in practice every method he thought adviseable for his patient's relief; but without success; at length it was judged expedient to have recourse to Surgery for the effecting that purpose; to which every method hitherto tried had proved unequal.

#### R E M A R K .

PERHAPS there are not two cases in Physic; or Surgery: or two constitutions that can truly be said to be in every respect alike: all therefore, that I can reasonably add to this short history is; that in the young l. dy's case; where the operation was successfully performed, the appearances of a recovery were  
to



to the full as unpromising, as they seemed to be in the case of *A. B.* where no operation was submitted to. This conclusion, I think then may be fairly drawn; that a doubtful remedy is better than none: especially so, where an operation skilfully performed cannot be attended with any danger at all equal to the disease.

# CASE XXXV.

*History of an Ascites, or Hydrops Pectoris, attended with such Circumstances as may possibly be esteemed worthy of Notice by the Curious.*

## INTRODUCTION.

SEVERAL instances have already been given of that disease of the *thorax*; which, from the nature of the fluid contained within the chest, Surgeons in general distinguish by the *Technical* term, *Empiema*: besides the *Empiema*, or collection of matter, to which sometimes one cavity of the *thorax*; and sometimes both *Cavities* of this part of the trunk are subjected; there is another affliction of this part of the body, which in its consequences is no less dread-



dreadful : I mean the *hydrops pectoris* ; termed likewise *ascites*, or dropfy of the chest.

THE fymptoms of this diforder ; and of the *Empiema*, fo far as relate to the diftreffes arifing from the preternatural preffure made upon the lungs ; the *mediaftinum*, the *pericardium*, the heart, and the *diaphragm*, are mechanically alike ; and therefore muft be accounted for in the fame manner.

UNDER certain limits, and circumftances of this difeafe, there have been inftances, where the hand of the experienced Surgeon has been proved to be fignally ferviceable ; and therefore recourfe may fometimes be reafonably had to an operation, with a profpect of fuccefs ; where the noble parts do not much partake of the *malady* : but in the following inftance, no more than a prefent and tranfitory relief could be expected ; as the complaint had been of long ftanding ; and the lungs upon diffection, were found to be difeafed in an extraordinary manner ; as by the following Narrative will be made evidently to appear.

C A S E XXXVI.

C. D. 40 years of age, was admitted in the year 1771, into *Guy's Hospital*, on account of a complaint in his chest: the external appearances were a considerable enlargement, and convexity of the right side of the *thorax*; accompanied with a thickness of its integuments; but there was neither an œdema nor inflammation of the part. The general internal indispositions and symptoms, were similar to those which have already been particularly enough described in those patients, who laboured under the *Empiema*: and therefore unnecessary to be repeated.

Soon after the poor man was admitted into the Hospital, an opening, by incision, was made betwixt the 5th and 6th ribs into the right cavity of the *thorax*. By this operation seven pints of a serous fluid were evacuated upon the spot. The operation was followed by a release from those symptoms which had long existed in a severe degree: but on the second day after the operation, the patient died.

## REMARK.

UPON the body being opened, the several *phænomena* that presented themselves were as follow : in the right cavity of the *thorax*, the *pleura* appeared to be very much thickened; the internal surface of this membrane was besmeared with mucus of a cream colour : the several portions of the lungs were so blended, as to leave no vestiges of their having formerly been composed of three distinct lobules, as by Anatomists is known to be the case on that side of the *mediastinum*, in a natural state of health. Add to this, that the size of this viscus did not exceed one fifth part of its natural bulk : this part of the lungs indeed was so diminished, and so removed from the natural situation, as at first sight to lead us to imagine, that the lungs in this cavity were quite gone. The adhesions of these small remains of the lungs to the *mediastinum* were so compleat, as to be inseparable. The investing membrane was equally thick with the *pleura* ; having its surface smeared over with mucus in a similar manner. There was no cyst discoverable in this cavity, as is sometimes observed

served to be the case in abscesses of the *thorax*. See *Le Dran's Observations* on this subject. In the left cavity of the *thorax*, the lungs consisted of two lobules as usual; and they were but little altered in their size or shape. In cutting through their substance, some schirrous tumours of a small size were found: and one print of serum, slightly tinged with red, lay loosely in this cavity.

C A S E XXXVII.

*Some Observations that were made upon the fatal Effects of the Tinctura Thebaica of the London Dispensatory; which Effects were produced upon the Body of an Individual; after having taken this Preparation of Opium in so great a Quantity, as to prove the Cause of a speedy Dissolution.*

**A**MONGST all my acquaintance, I meet with very few who have hitherto had an opportunity of seeing such fatal symptoms, as were the immediate consequence of this useful and celebrated medicine being received into the human stomach, in so large a quantity, as to prove an absolute poison: for  
this



this reason, may I not presume it almost needless to apologize for proceeding to publish a concise history of the following fact ; which some years ago I had an opportunity of paying a strict attention to ? Should the symptoms that occurred in this instance prove at all useful ; when related in a concise, and faithful manner ; I may then think myself sufficiently compensated for the little trouble I am at in writing, and publishing this short Memoir.

*A. B.* a strong ; plethoric ; and healthy man ; about the middle stage of life ; a little before his usual hour of going to bed, determined upon taking a considerable quantity of *opium* ; which he had artfully procured for the purpose of putting a period to an uncomfortable state of existence. This medicine, was the *tinctura thebaica* ; which in quantity amounted to nearly an ounce. In the course of the night, this draught had taken its desired effect : early in the morning of the following day, (which was about nine or ten hours after the medicine had been taken,) I was called to the patient's assistance. The symptoms which appeared at that time were as follow : in the face there was an uncommonly



commonly variegated appearance : the complexion was of a purple colour, longitudinally streaked with whitish lines : he was in a very deep and profound sleep ; accompanied with a loud ; a laboured ; an hissing ; and a slow respiration. His pulse was remarkably slow ; very full ; and intermitting. Upon viewing the anterior part of the trunk, I discovered a considerable prominence ; tension ; and fullness of the *abdomen* : the legs ; the feet ; and the toes were remarkably extended. All power of swallowing was extinguished.

The *vertebræ* of the neck ; the *vertebræ* of the back ; and the *vertebræ* of the loins were perfectly stiff ; rigid ; and immoveable. In this state too were the joints of the extremities. Every part of the body was bedewed with a clammy sweat : and there plainly appeared to be a total loss of sense and motion : that degree of sense and motion excepted, which originated from the action of some of the muscles of respiration, and from the involuntary actions of the heart : of the lungs ; and of the two capital arteries ; to wit, *Aorta*, and *Arteria Pulmonalis*, which arise from the two *ventricles* of the heart. The patient had been plentifully bled from one of the arms

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before

before I arrived at the house. At the time I was there, a Physician of eminence was present : who, having considered the disease as an apoplexy, originating from a very different cause, was induced to prescribe a repetition of bleeding : the patient was accordingly let blood by his Apothecary in my presence : I observed the blood to flow with unusual velocity from the vein of the arm : the blood was rarefied, thin, and florid : in these respects it very much resembled arterial blood. In about an hour after the second venesection ; the subject died. His body not having been opened, for this reason I am deprived of giving to my reader a more satisfactory account of this matter.

If we refer ourselves to the late Dr. *Mead's* Chapter of *Opium*, pages 266 and 267 ; it may be observed, that in many respects the symptoms that were produced upon the dog, to which the Doctor had administered three or four considerable doses of *opium*, were very similar to those that happened to my patient : for all the legs of that dog were found to be stiff, and rigid as sticks, and the dog lay snorting : upon opening this animal's body, the stomach was found to be wonderfully distended ;

tended ; though it contained nothing but some water, and *opium* : the water was that in which the *extractum thebaicum* had been dissolved, previously to its being forced into the stomach of this quadruped. For a more satisfactory, and particular account of *opium* ; and of the various experiments made upon animals with this poison, I beg leave to refer my reader to the 5th volume of a book, entitled, *Medical Essays and Observations*, published by a Society in *Edinburgh* : in this Publication you may find at page 110, a chapter, entitled, a Dissertation on *Opium*, by *Charles Alston*, professor of *Botany* and *Materia Medica*, in the *University of Edinburgh*.

CASE XXXVIII.

*The following are such Observations as were made upon opening the Body of a young Lady of Eight Years old ; who for a considerable Time had been affected with various Symptoms of the Scrophulous kind ; which admitted of but little Relief.*

THE body in general was extremely emaciated, little or no fat was found in the *omentum* : upon lifting up the *omentum*, there

appeared a large collection of diseased, and enlarged glands ; which, upon being enumerated, were found to amount to 27 in number : these tumours were of different sizes ; some were as large as marbles ; some of the size of ripe grapes ; whilst others were as small as common red currants.

BESIDES the diseased glands already spoken of, there was an indurated tumour of a considerable extent, which resembled an hen's egg, both in shape and in size : this tumour was situated on the right side of the two inferior *vertebræ lumborum* ; and nearly in the centre of the diseased glands already spoken of : in its shape the tumour was unequally formed ; in some parts of its surface it was prominent ; in other parts it was depressed, or rather indented : so that in some measure it resembled a gland of the *conglomerate* kind.

THAT portion of the *intestinum colon* to which a part of the *omentum* is connected had assumed an inflamed appearance : the vessels of the intestine were so replete, and distended with blood, as to resemble a curious, and successful injection. The coats of the stomach, and *duodenum* were of their natural colour :



colour : these *viscera* were quite empty and flaccid.

UPON lifting up the stomach, another schirrous tumour of a considerable size presented itself ; this lay upon the *pancreas* : its shape was oblong : upon cutting into the body of the tumour, its substance was found to be uniformly hard and solid.

THE liver was nearly, if not altogether of its natural size : this *viscus* did not seem to be at all diseased : except that the gall-bladder was found to be much enlarged ; and distended with an encreased quantity of bile, of a dark, and dusky colour. The spleen was somewhat less than usual ; and upon cutting through it, its texture was more solid, and firm than it is generally found to be in a sound state of health.

UPON elevating the intestines, the whole *cellular* membrane of the *mesentery*, termed by Anatomists *Cellularis Ruyschii*, appeared to be loaded with so many distinct tumours of different sizes as could scarcely be enumerated. Upon cutting through some of the diseased glands of the *abdomen*, they appeared to be replete with an uniformly soft substance, that resembled cheese curd : so that these tumours

might with some propriety be classed under the head of encysted tumours of the *atheromatous* kind.

THE *thorax* being, afterwards opened, and properly inspected ; the lungs were found to be somewhat diseased ; but not greatly so.

THE heart, and the *pericardium* were in their natural state.

THE *thymus* was considerably enlarged : in its shape it was more irregular than common : in its substance it was uniformly schirrous : having no *sucty*, or curd-like appearance within its investing membrane.

### O B S E R V A T I O N.

THIS is one of the very many cases that are found, upon scrutinizing into the animal œconomy, to be attended with such a variety of circumstances and affections, as could not have admitted of a cure ; or even of any material relief ; had it been possible to have been perfectly acquainted with the precise state of the disease, during the life of the individual : and it is a melancholy reflection, that must often occur to those ; who are much employed in dissections of this kind ;

kind; that from inspecting diseased bodies, there are in general but few inferences to be drawn, so useful as could be wished, by the Physicians, or Surgeons, who have already been, and shall hereafter be engaged in the treatment of disorders similar to the preceding; as well as in the management of many other diseases, to which the *viscera* are so obnoxious.

## C H A P. VII.

*Of the Operation for the Bubonocoele.*

THIS I believe is generally esteemed to be one of the most troublesome and dangerous operations that occurs in the practice of Surgery ; but the difficulty of performing this operation with dexterity and safety, will be greatly lessened by acquiring a previous knowledge of the anatomy of the parts before it is undertaken ; and by revolving in our minds what will probably be found necessary to be done under the different occurrences that may attend this complaint : which perhaps is accompanied with a greater variety of circumstances, in different subjects, than any other disease requiring operation.

IT is not my intention in this place to enumerate the great diversity of symptoms and appearances that have been known at different times to accompany the incarcerated *hernia* ; nor can I by any means say so much upon this subject from my own experience, as may be learned from the writings of the very accurate and ingenious Monsieur *Le Dran* ; to whose  
valuable



valuable works I must refer those who are desirous of arriving at a minute and necessary knowledge of this disease: however, I will venture to say, from what has occurred to my own experience, that the danger in the performance of this operation, does not arise from the wound which is necessarily made through the *peritonæum* and tendinous portions of the oblique muscles of the abdomen (called by anatomists *ligamentum fallopii*) but that the danger is undoubtedly caused by deferring the operation too long; on which account the prolapsed portion of the intestine (from the præternatural compression it has long undergone from the rings of the abdominal muscles) becoming exceedingly inflamed, or upon the point of mortification, communicates the disorder to the neighbouring *viscera* of the *abdomen*, and renders them incapable of performing their usual functions: under which circumstances the whole belly becomes prominent, tense, hard, and greatly enlarged.

If we may be allowed to judge from analogy, it may be concluded, that wounds of the tendinous, or even of the membranous parts, when made with a sharp instrument, are by no means followed with that degree of danger which

which some eminent Surgeons have supposed them to be. This being allowed, the danger arising from these causes cannot reasonably be put in competition with those proceeding from a violent inflammation and approaching mortification of the smaller intestines, which are known to be of a very delicate texture, very susceptible of injuries, and are immediately subservient to the purposes of life.

IN wounds of the flexor or extensor tendons of the hands, or of the great tendon of the back part of the leg, called *tendo achillis*, we rarely see that these accidents are attended with any violent inflammation, or considerable danger, when they have been in part, or wholly divided by a sharp instrument; but that they almost always do well with rest and gentle treatment, supposing the patient to be of a good habit of body; so too in large incisions of the *tunica vaginalis* of the testicle that are put in practice for the radical cure of the disease of this part, called *Hydrocle*; although it has often happened, that severe inflammations and imposthumations have been the consequences of such methods, yet I profess I have never once seen an instance of their fatality: nevertheless, I would not have it suggested from any arguments

arguments I have advanced upon this subject, that I mean to recommend the operation for the *bubonocoele* in any other stage of the disease than in such a painful and dangerous one as cannot be relieved by bleeding, emollient purgative clysters, the use of the warm Bath (which is to be preferred to all other fomentations in this case) and such other methods of practice as are proposed and recommended by the most experienced modern writers upon this subject; but I would have it at the same time be remembered, that the danger attending this malady doth always proceed more immediately from the affection of the intestines, than from any inflammation or suppuration consequent upon an incision made through the *peritonæum*, or tendons of the oblique muscles of the *abdomen*; and therefore that the operation should not be deferred till the patient's strength be too much exhausted by continual pain; costiveness; and hiccoughs; an encreased symptomatic fever; a want of rest, and an inability of keeping either medicines, or soft nourishment in the stomach; joined with an enlargement, tension, and elevation of the *abdomen*.

It may be observed, that I have not spoken of the application of the fumes of tobacco-clysters

clysters in diseases of this kind, to the internal parts of the intestines : I am by no means ignorant of the great encomiums that have been passed upon tobacco-clysters by *Heister*, and others upon these occasions. I have often followed their advice in incarcerated inguinal hernias, and I think I have given these clysters many fair and repeated trials ; but I cannot say that I ever found them successful : the three last patients they were tried upon all died : in these patients the fumes ascended to the mouth : the disagreeableness of which the patients complained much of. In one of these instances there was no elevation or apparent tension of the *abdomen* ; in the other two these symptoms appeared in a considerable degree. The operation was at length unsuccessfully performed on one of the young men, into whose mouth the smoak of the tobacco passed, but he died in 48 hours : neither of the other two would submit to the operation. However, that every circumstance of consequence may be mentioned, I must observe, that in one of the two patients who died, the intestine was returned, but not one of the symptoms ceased, which indicated a mortification, and his approach-

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ing dissolution: and if I were at all disposed to argue theoretically, I must infer, from what I have observed of this practice, that it never can be of service, but by rarefying the confined air in the intestines, which does no service; but that the inflammation is probably encreased by the heat and stimulus of the smoke of the tobacco, and from thence arises an encrease of the malady.

IN the processes of this operation it has been said, that no part of the *omentum* should be cut away unless it be mortified; but I am persuaded it will be found necessary to differ from this rule upon particular occasions; and from attending to the history of the following case I do not at all doubt, but the practice will be judged reasonable and necessary by men of candour and experience in the profession of Surgery.

## C A S E XXXIX.

IN the month of *February*, 1757, I was called upon to visit Mr. *A. B.* a gentleman who had been confined to his bed for twelve days with an *hernia inguinalis* and *scro-*  
*tails,*

*talis*, for which he had received no relief at all from any thing that had been done for him ; but, on the contrary, he gradually grew worse.

UPON feeling the tumour I discovered a very great tension upon it: the elevation reached from the perforation of the *obliquus descendens* muscle of the *abdomen* to half way down the *scrotum*. The patient had a severe symptomatic fever, was harrassed with frequent retching, had voided no stool for the last seven or eight days ; and was in so great and continual pain, that he was desirous of submitting to any treatment that might be thought reasonable, and likely to give him ease. There was a considerable tension and hardness on the upper part of the tumour, just such an one as I have frequently had an opportunity of remarking, (and which perhaps is not easy to describe,) where no relief could be afforded in the like disease but by operation ; under these circumstances I was convinced he had no chance of recovery but by submitting to the operation ; which I imagined could not be deferred many hours longer, without greatly diminishing the prospect of its success ; for this reason I proposed it  
to

to him, to which he readily acquiesced ; and it was accordingly done. After making my incision with a round pointed knife, which I began a little above the superior extent of the tumour, and continued a little below the inferior extent of it, I proceeded with care to divide the sac of the *hernia*, which discovered to me a considerable portion of the *omentum* rolled up like a ball. The ball of *omentum* had a very uncommon appearance ; to the touch it was so crisp, and so near to a state of brittleness, that I was for some time in doubt what it was ; I separated its fibres pretty easily with my fingers, and at length arrived at its centre ; in which was inclosed a small portion of the *intestinum ileum*, or *jejunum*, I could not tell which, nor was it at all material for me to determine this point. The gut had acquired a dark brown appearance, and felt quite tense : I proceeded next to divide the rings of the muscles obliquely upwards and outwards, and then returned the intestine into the *abdomen*, by gently pressing it with my fingers. The instrument I used for dilating the rings of the abdominal muscles was a pair of probe scissars, which I have always found to be the most manageable and less hazardous

hazardous instrument for this purpose : and which in general may very safely be made use of without the assistance of any other guide than the fore-finger of the left hand, which must be first introduced a little way through the wound of the tendons of the oblique muscles of the *abdomen*, with which the intestine may be easily kept safely under, and the lower blade of the scissars by this method prevented from doing any mischief.

AFTER the intestine was returned into the *abdomen* I cut away at least two ounces of the diseased *omentum*, which was the whole of what lay in the *scrotum*, without making any ligature upon it : from which no blood at all was discharged. That portion of the *omentum* which lay in the passage from the *abdomen* to the *scrotum* adhered firmly to the neighbouring parts, where I left it ; and then made two transverse stitches through the lips of the upper part of the wound, by passing the needle through the integuments only at about the third part of an inch from the edges of the wound, and at about an inch distant from one another ; the ligatures were about the thickness of a common silver probe,  
made



made of coarse thread, but not waxed, because these are less liable to wear through the edges of a wound than ligatures that are waxed, and therefore to be preferred in all cases, where they are designed merely as re-tentives.

IMMEDIATELY after the operation, an emollient clyster was administered as an internal fomentation, and to procure an evacuation of the *fæces*, both which purposes it very well answered; but as there still remained some pain in the *abdomen*, and the pulse was now become too quick and full, the patient was twice let blood in the first three days after the operation, which wholly removed the remains of the inflammation; from this time he went happily on, and in less than five weeks the cure of the wound was completed. To prevent any return of the complaints, the patient was very strictly kept upon a soft liquid diet for a fortnight after the operation: and then he was permitted to eat only such solids as were supposed to be the most easy of digestion till he was quite well.



## R E M A R K.

AGREEABLE to the advice of the most eminent practitioners I directed the patient to wear a steel truss upon the part; which he has done ever since the wound has been healed: but I believe in this particular instance there was no great occasion for such a precaution; since that portion of the *omentum* which adhered to the internal surface of the passage leading from the *abdomen* to the *scrotum*, served effectually to stop up the natural opening; and rendered a return of the *hernia* not very probable. The method of treating the wound was by fomenting it twice a day with an emollient fomentation; the part was dressed with warm digestive, and over the digestive a pledgit of tow spread with the *ceratum album* was laid: all which dressings were secured on with a broad single T. Bandage, and continued as long as was thought right. In this operation it is sometimes found necessary not only to remove part of the *omentum* when diseased, but to take away likewise a part of the *peritonæum* that forms the sac of the *hernia*: This sac sometimes becomes

becomes exceedingly indurated and thickened ; under which circumstances the excision of it is adviseable and necessary.

CASE XL.

*Of an incarcerated Hernia Inguinalis.*

*A.* B. about 20 years of age, in the year 1748-9, was brought into the Hospital with an *hernia inguinalis*, which he had been subject to for many years without ever wearing a truss. It had been down for ten days ; attended with excessive pain, without being once returned, or any means used to relieve him. His symptoms were a low languid pulse, frequent retchings to vomit, and hiccoughs. The tumour was still exceedingly tense : for which reason it was judged adviseable to proceed immediately to the operation. The contents were a part of the *intestinum ileum* and *omentum* ; both exceedingly inflamed, and the latter tending to mortification. They adhered to each other, and the *omentum* to the sac formed by the *peritoneum*, which was become thicker than a crown-piece, and seemed quite distinct from the *tunica vaginalis*, upon which

it lay : this proved the *hernia* I am describing not to be of that kind known by the term *hernia congenita* : that is, an *hernia* occasioned by a part of the contents of the *abdomen* falling into the *tunica vaginalis testis*, and coming in contact with the *tunica albuginea* of the testicle ; which sometimes happens. The *sac* as well as the diseased part of the *omentum* were cut off, without making any ligature upon either of them. The intestine and sound part of the *omentum* were returned into the *abdomen*, and two stitches were made through the integuments, after having first dilated the rings of the oblique muscles upwards and outwards with a pair of probe scissors. Soon after the operation, a clyster was administered, by which means two or three stools were procured, and the patient grew tolerably easy. The second day after the operation, the whole *abdomen* became prodigiously enlarged and tense ; but in a few days afterwards it subsided by the help of fomentations and clysters, and the patient went on seemingly well to the eighteenth day ; when on a sudden he became very restless : a violent looseness, attended with *delirium*, ensued ; and he expired about forty eight hours after this attack. Upon opening the body, I found the intestines in general  
greatly



greatly inflamed, the *ileum* was mortified in many places, and several abscesses were formed in the mesentery.

*Query.* Is it not probable, that the bad symptoms, such as inflammation, tension, &c. ceased a few days after the operation; and that the fever, attended with inflammation, which came on afterwards, was merely accidental, and not at all the effect of the operation? Since it is very certain, that all inflammations of the small intestines, terminating in mortification, are generally very speedy, and admit of no great intermission in their progress.

## CASE XLI.

### *Of an Hernia Umbilicalis from Tapping.*

**N**otwithstanding it seldom happens, that an *hernia* is formed in consequence of opening the integuments at the navel, in order to evacuate the water contained in the *abdomen*, in that species of dropsy called *Ascites*; yet there have been undoubted instances where this species of rupture has arisen merely from this cause, and been attended with such circumstances as made it necessary to perform the operation for the *hernia umbilicalis*. It appears

Q 3

that

that the opening made through the *peritonæum*, though very small, is nevertheless capable of being so much enlarged from the stream of water in the time of its evacuation, or from the pressure of the intestines against the internal part of that membrane, grown greatly distended and flaccid from the quantity and nature of the contents, as to make it incapable of resisting the force it sometimes meets with in coughing, sneezing, &c.

*A. B.* was admitted into the Hospital with an ascites or dropsy of the *abdomen*, which was become so distended by the water, as to render him incapable of lying down without bringing on such a difficulty of breathing as threatened suffocation (from the compression, probably, which the *diaphragm* and lungs laboured under in this situation of the body) for these reasons it was judged necessary to tap him. Upon examination, his navel appeared *protuberant*, and pushed forward as large as an egg. Its integuments were thin, and almost transparent. Upon my considering, that an opening made through this part would be sufficient to evacuate all the water; and having several times performed the same operation (agreeably to the advice of the moderns) without

out incurring the least inconvenience, I did not at all hesitate at the propriety of repeating it, which I did in the following manner.

THE patient being seated in a chair of a convenient height, and his hands properly placed across the upper part of the *abdomen*, at the same time an assistant pressing on each side of it, I introduced the point of a lancet into the navel on its most protuberant part, and by this means discharged the whole of the fluid without farther trouble: after this, a flannel compress, dipt in spirits, was applied upon a plaister that was first put to the wound, which was secured on by a long flannel roller, and the patient removed to bed. He was as well as could be wished for several days after the operation, but at length complained of excessive pain in the navel, which appeared swelled and inflamed, attended with frequent retchings to vomit and fever (the constant symptoms of an incarcerated and inflamed *hernia*) I endeavoured to relieve him by fomentations, clysters, &c. but his pains remaining intolerable, and being incapable of assisting him by any other means, I proceeded to the operation: which I performed in the following manner.

THE patient being removed from his bed and laid supinely upon a table of a convenient height, covered over with a double blanket, I placed a pillow under his shoulders, by which means the *abdomen* became relaxed; his legs, at the same time hanging down from the sides of the table, were properly secured by two assistants. After this, I began with making an incision, with a round-edged knife, at the upper extent of the tumour; continuing it in a straight direction downwards, a little beyond its lower extent; upon cutting through the integuments, I discovered a portion of the *intestinum ileum* without any of the *omentum*; the intestine was greatly inflamed. When I had proceeded thus far, I introduced the fore-finger of my left hand through the wound into the cavity of the *abdomen*, with which I gently compressed the intestine, and then proceeded to enlarge the wound with the same knife, which I introduced upon my fore-finger. This gave me an opportunity of returning the intestine without difficulty. It appeared quite loose, and free from adhesion. When the intestine was thus returned, I made one ligature across the wound, by passing a crooked needle through the integuments only, at about a  
quarter



quarter of an inch from the edge of the lips of the wound : but the *abdomen* appearing considerably distended in two days after the operation, and the patient complaining of great uneasiness from the ligature, I immediately cut it away, which relieved him ; but the symptoms of his vomiting, &c. still continued, and he expired in a few days afterwards.

*Query.* Is it not probable, that if the operation of the *paracentesis* had been performed on the left side or right side of the *abdomen*, obliquely below the navel, half way betwixt that and the spine of the *os ileum*, that the patient might have lived for some time, as is very common in cases of this kind ; and is it not more than probable, that his speedy death was brought on by the strangulated intestine ? If this be allowed, it may be inferred from the preceding case, that the operation cannot be said to be entirely free from that danger which may always be avoided by tapping with the trocar, in that part of the *abdomen* I have just now described : but I must own, this accident is not often likely to occur, since this is the only instance of the kind I have ever seen, which arose from the like cause.

## CASE XLII.

*Of a Wound penetrating the Abdomen.*

*J.* W. aged 22, was stabbed with a Horse-picker on *Wednesday* the 22d of *November* 1748, about three inches a little obliquely on the right side, below the navel. He bled very little at first; about an inch of the small *intestine* pushed out at the orifice, which was returned by a Surgeon, and the wound sewed up.

THE wound continued discharging blood in small quantities till the *Sunday* following, when his fever increased, and a large quantity (as nearly as could be guessed about a pint) of blackish curdled blood, burst out at the orifice; the ligature burst open the following week.

THE fever continued with vomitings, accompanied with a tension of the whole *abdomen*, which was particularly hard and tumified, in the neighbourhood of the orifice.

IN this circumstance, I had thoughts of dilating the *abdomen*, in order to evacuate the extravasated blood; but the *Sunday* following it discharged itself in a larger quantity than before, and continued to discharge very greatly  
for

for some days, when it began to diminish; all the bad symptoms (vomiting, purging, fever, loss of appetite, &c.) by degrees abating, and in process of time the discharge was purulent, but considerable in quantity. However, it healed without any further incision, and was well the 17th of *January* following.

*Query.* Is it not reasonable to conclude, from the circumstances attending this case, that the violence of the symptoms arose from the extravasated fluid being confined in the cavity, and from the inflammation consequent upon the needle and ligature being passed through the *peritoneum* and tendinous expansions of the *transverse muscles* of the *abdomen*.

It is probable, that if a free discharge of the blood could have been procured from the beginning (which might possibly have been effected by leaving a depending orifice) these symptoms would have been prevented. So that in all wounds penetrating the cavity of the *abdomen*, we should only make use of the future, where the intestines are incapable of being retained in their proper situation without it; at the same time having a regard to a depending orifice for the discharge arising from the divided vessels.

## C H A P. VIII.

*Of the Stone in the Bladder of Urine.*

THE stone in the bladder is a disease to which both sexes are subject ; and probably the urine of females is equally liable with that of males to the formation of stony concretions ; but as the *urethræ* of women are larger, shorter, more depending in their situation, and more capable of dilatation than those of men, these may very likely be the reasons why so few females, compared with the number of males, are in such a degree afflicted with this disease, as to require the Surgeon's assistance for the extraction of one, or more stones out of the bladder. The exact difference betwixt the number of males and females that undergo this operation, I am unable to ascertain ; but by what I can recollect from my own experience and observation, I think I may venture to say, there are at least ten males to one female who come under the Surgeon's hands upon this account. In some subjects it happens, that the formation of a stone originally begins in the papillæ of the kidneys ; in others in the pelves of the kidneys ; whilst  
in



in others there is no apparent disposition to a formation of a stone in any part of the kidneys themselves, or their pelves, but this stone concreting disposition begins to shew itself in the bladder; as appears to have been sometimes the case from the effects that are produced by extraneous bodies; such as pins, needles, bodkins, bullets, bits of bone, bougies, &c. which were accidentally admitted into the bladder, and which by being lodged there, have shortly attracted the gravelly particles of the urine, and became the *nuclei*, or bases of stones of a considerable size. Instances of these phænomena have now and then occurred to men of experience; of which we have many accounts delivered to us from undoubted authority: amongst these, the case of *M. E.* described in one of the following cases, is perhaps one of the most singular, and unaccountable: if the stone be originally formed in any part of the kidneys, it often happens from the streams of urine which are almost continually secreted by these bodies, and plentifully conveyed from them through the *tubuli urinarii* into their membranous pelves, that the stony particles are washed away through the *ureters* into the bladder; from whence they are happily

pily discharged by the *urethra*, sometimes in the shape of complete round small stones of a redidsh hue, resembling the spawn of a boiled lobster, whilst at other times they are voided in the figure of barley-corns, olive-stones, &c. and are of different colours and consistencies in different subjects. But this is not always the case; for it now and then happens that a stone, though small enough to be discharged from the bladder into the *urethra*, is incapable of passing through that channel with the stream of urine, therefore it must necessarily remain there till it be removed by art, which sometimes it is found necessary to do by incision, on account of the violence of the pain, as well as by reason of a suppression of urine, being brought on by the passage being plugged up.

AT other times it has happened, that a stone has remained fixed in the *urethra* for several years without occasioning any considerable pain or a suppression of urine; and that the stone has at length encreased to a very extraordinary size, becoming troublesome only from its weight and bulk: two instances of which I have at different times had under my care: which on account of their singularity I have thought proper to give the following  
short

short account of ; and have likewise caused a drawing of the stone to be made, and added to these chapters.

S. B. a young man aged 20 years, put himself under my care in *September* 1759, to be cured of a complaint which he had in the *urethra*. Upon enquiry I was informed by him that he had little or no pain, that he had no difficulty in voiding his urine, which he did in a full stream ; but that he had a swelling betwixt the *scrotum* and *anus*, which was inconvenient to him when he moved about. Upon feeling the part there was a very evident hardness, and tumour ; by introducing a bougie into the *urethra*, it was plain there was a stone. I advised the cutting it out ; which was complied with ; and I proceeded to the performance of the operation in the following manner.

THE patient being placed upon a steady table of a convenient height, covered with a double blanket; and a pillow being placed under his shoulders, I caused his hands and feet to be tied together in the same manner as is done in the operation of cutting for the stone in the bladder. The patient being steadily held in this posture by means of two assistants, I  
divided

divided the *urethra* longitudinally, by incision, as far as the tumour extended ; and with my thumb and finger, I readily extracted the stone ; after the stone was extracted, I brought the lips of the wound together, and kept them so with the twisted suture. By means of this suture, and by passing a bougie through the *urethra* beyond the extent of the incision, which was continued in the passage every day for several hours, the wound proceeded happily on till it was quite healed : which was in about three weeks ; and there remained no inconvenience at all.

*N. B.* the patient never remembered to have had any pain like a fit of the stone. Sometimes it unhappily proves, that the stone which is formed in the papillæ or pelves of the kidneys remains in that situation till it has arrived to so considerable a size, as to be incapable of passing easily through the *ureters* ; from whence inflammations, excruciating pains in the small of the back, extending obliquely across the *abdomen*, accompanied with vomitings, contraction of the spermatic chord and testicle, acute pain in the *acetabulum* of the *os innominatum* and a numbness of the internal part of the thigh on the diseased side are  
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in some subjects produced ; which several symptoms are often happily removed by the Physician's assistance. Sometimes the disease terminates in the death of the patient ; at other times it has happened, that a stone from being immoveably fixed in the pelvis of the kidneys, has produced an inflammation and enlargement of that body, and its neighbouring parts ; which has at length ended in an abscess ; and by bursting has formed an external opening ; through which there have been occasional discharges of gravelly, and stony particles. But if this tumour be opened by incision, and the stony particles be extracted by the Surgeon, the operation is then called *nephrotomy* ; which operation notwithstanding whatever may have been said by *Marchetti* or others upon the subject, can only take place when thus circumstanced, and then the performance of the operation is not attended with any greater difficulty than the opening an abscess in any other part of the body.

IF the stone has passed from the kidney through the *ureter* into the bladder, and remains there till it becomes large, it seldom happens that it is long confined in the bladder without bringing on painful symptoms ; the frequency and severity of which depend upon  
R constitution,

constitution, motion, the size, situation and form of the external surface of the stone, or stones, that are lodged in the bladder. Rough, large and pointed stones *cæteris paribus*, being always productive of more severe symptoms than such as are smooth, not rugged, and small.

THE symptoms which arise from a stone in the bladder are different in different subjects, both as to frequency and severity: some people who are afflicted with this disease complaining of continual pain, whilst others shall enjoy long intervals of ease; but this difference, as I have before observed, depends upon circumstances. For instance, if the stone in the bladder be small, not pointed, nor rugged; if the patient be of a sober disposition, and his station of life gives him an opportunity of keeping still and quiet, the neck of the bladder (which perhaps is the principal seat of pain) will not in general be subjected to such frequent irritations and consequent inflammations as it would otherwise be. As a proof of the neck of the bladder being the part chiefly affected in a fit of the stone, and from whence the severity of the pain arises, I affirm I have often observed, upon searching patients

who

who labour under this disease, that although they have been in excessive torture at the time of submitting themselves to this examination, the instrument by passing into the bladder has removed the stone from the beginning of the *urethra*; in consequence of which the patient received very speedy relief, and an interval of perfect ease has succeeded and continued till the stone returned to the neck of the bladder: which in some instances has not happened for a considerable time afterwards.

THE symptoms arising from a fit of the stone are not always such as can lead the Surgeon to determine positively upon the true nature of the disease without searching; there being many causes which produce almost the same effects in the bladder as those arising from a stone. If the neck of the bladder, or the *urethra* itself, be inflamed in consequence of an excrescence, or contraction of either of these parts arising from venereal, or other causes; if there be a disease of the prostate gland; or if the patient labours under a disease of the *intestinum rectum* proceeding from the piles, or a schirrous state of that gut, these maladies will frequently produce such symptoms, as are very like some of those attendant upon a stone in the bladder; and I have known



several instances, where from an imposthuration of the kidney (a disease I think more frequent in females than males) such excruciating pains have arisen in the bladder, *urethra*, and neighbouring parts, attended with almost constant inclination to urine, and voiding it by little and little, with a large quantity of slimy sediment deposited in the urinal, as has rendered it impossible for me to determine absolutely what the disease was, till I have been convinced from searching into the bladder, that neither a stone, nor any other disease of that part, or the *urethra*, has been the cause of these complaints. The patients under these afflictions have gradually wasted away, and at length died; several of which I have had an opportunity of opening, and have sometimes found one kidney, sometimes both greatly wasted, exceedingly flabby, and a considerable quantity of matter has, by squeezing, been pressed out of their *tubuli* or *papillæ*; in these I have never found any gravelly or stony particles; and I have observed, that the patients had very little or no complaints in the kidneys themselves, which I suppose may be accounted for from their being so sparingly supplied with nerves, as Anatomy teaches us they are. At other times I have known much the same complaints



complaints produced in the urinary parts of females, as those I have already described, where no stone, nor any other disease of the bladder or *urethra* has appeared upon searching; but upon introducing my finger up the *vagina*, a schirrus of the *uterus* and *vagina* has been discovered, from whence arise those affections of the bladder from a consent of parts. But in these cases there was no slimy sediment in the urine; which, when the kidneys are much affected, is generally very glutinous, slimy, and remarkably great in quantity.

THOUGH I have observed, that some of the complaints which are attendant upon a stone in the bladder are similar to those that are produced from many other causes, yet I think there are certain symptoms which are peculiar to the stone. These are an inclination to go to stool, attended with a baring down of the *rectum*, whenever the patient urines; an incapacity of riding on horse-back, or in a carriage upon rugged roads, without greatly aggravating the usual symptoms, and sometimes bringing on an evacuation of bloody urine; which circumstances, when joined to an increased pain in voiding the last drops of urine,

and that pain is continued to the *glans penis*, make it hardly doubtful that the patient has a stone in the bladder. But the most certain marks of the distemper are, the patient's being capable of feeling something roll about in his bladder, and of easing his pain, or promoting the evacuation of his urine by altering the position of his body, or by thrusting his finger up the fundament: by which means the stone becomes removed from the neck of the bladder; which is a very common thing with boys to endeavour at by standing upon their heads, and by forcibly pulling their yards; by which means the *prepuce* in them almost always becomes considerably elongated and inflamed.

THUS much I thought not improper to say upon this subject before I proceeded to an account of the following cases, as it might possibly give some information to the younger Surgeons, for whom these papers are principally intended: and probably may prevent them from giving too positive an opinion in diseases of this kind, before they have sufficiently satisfied themselves of the facts by a previous examination of the parts: which I would always recommend to be done, lest they fall into an error of judgment.

C A S E

*Fig. 1.*



*Fig. 2.*







## CASE XLIII.

*A singular Case of the Stone.*

**I**T is a maxim laid down by the most experienced writers in Surgery, that when a stone, taken out of the bladder, is found to be rough on its surface, it amounts to a proof of there being no other remaining behind. But notwithstanding it is confirmed by Experience, that this observation is generally well grounded, yet there are instances which prove this rule to be not altogether without exception.

FOR which reason it is adviseable not to be determined absolutely from appearances only, but to be farther satisfied during the operation, by introducing the fore-finger, or a female catheter, through the wound into the bladder; which may always be done without giving much pain to the patient, or any great trouble to the operator; and is doubtless the best way of being satisfied in a fact of so great importance.

SINCE I have had the opportunities of making the two following observations, I

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cannot help conjecturing, that there have been some instances of a stone, or stones, being left behind in the bladder, merely from having too great a confidence in this general rule at the time of operating ; which opinion I am led into, from having sometimes known patients relapse into the same disorder, in a few months or weeks after the healing of their wounds, and to require a second operation: when the stone, upon being extracted, has appeared of so considerable a size, as to make it probable, that it must have been of much longer growth than the short time between the two operations could admit of.

In *October* 1753, I cut a boy of 14 years of age, from whom I extracted a rough stone of the size of a pigeon's egg. After which, I introduced my fore-finger through the wound into the bladder, and discovered a second rough stone nearly of the size with the former; which I likewise extracted, and the patient recovered without any occurrences worthy of communication.

## R E M A R K.

IN a few days after the operation it commonly happens, that some of the urine passes through the *urethra*, and continues to do so without interruption, till the whole of it finds its way through this channel, and till the wound is healed ; but I have sometimes observed, that at the end of several weeks, the urine still continues to flow in great quantities through the wound, and endangers a fistula ; or at least greatly retards the healing of the wound. In such cases, I have introduced a bougie through the *urethra* into the bladder, with advantage. This, by equally distending the passage, and pressing upon the internal part of the wound, has in a few days diverted the course of the urine, and disposed the parts to heal more evenly and expeditiously than they otherwise would have done.

*N. B.* The reason that induced me to be particularly circumspect in the case I have just now spoken of, arose from the following accident,

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IN *December* 1752, I saw ten rough stones presented to the *Royal Society*, which were taken out of the bladder of an old man ; the largest of which weighed eight ounces and an half, the others were small ; these stones were taken out of the bladder after the patient's death.

SINCE then it appears, from the preceding accounts, that two instances have occurred in so short a time, which prove exceptions to the general rule laid down by almost all writers ; I was induced to offer these histories to prove the possibility of the like *phenomenon* happening again.

N. B. Since the third edition of this work was published, I have seen a few instances of a similar kind, which farther confirm the reasonableness of this doctrine.



## C A S E XLIV.

*Of a Piece of Bone, together with a Stone in the Bladder, successfully extracted. Inserted in the Philosophical Transactions, printed Anno 1753.*

THE stone in the bladder is a disease common to both sexes: and the symptoms and circumstances attending it, are in general so much alike, and so well known, as to render few cases of this kind worthy of particular notice; but as the following is attended with a very singular, and perhaps unparalleled circumstance, I am induced, merely on this account, to give a short history of the following fact.

*M.E.* aged 48, (in all other respects an healthy woman) had been afflicted with the symptoms of the stone in the bladder for about two years, for the relief of which she put herself under my care. After having prepared her in the usual manner, I proceeded to the operation: but in a method somewhat different from that generally practised; which is effected merely by a forcible

forcible dilatation, and sometimes by a laceration of the *urethra*; but having almost always observed an incontinence of urine, in consequence of this method of operating; for this reason, and from the success which I had some time ago met with in the case of *M. B.* as hereafter related, from whom I had extracted an excrescence that was growing on the inside of the bladder; I differed from the usual method of operating, and cut the *urethra* obliquely upwards on the right side to about half its length, which I easily effected by introducing a small knife into the groove of the staff; this being done, I found very little force requisite to the introduction of the gorget and forceps into the bladder, and in the extraction of the stone and piece of bone.

UPON laying hold of the stone, it broke: so that only a part of it, the size of a pigeon's egg, was extracted upon the first introduction of the forceps into the bladder; upon introducing the forceps a second time, I extracted a ragged and irregular piece of bone, weighing sixteen grains.

BEFORE the bone was washed and cleansed, its cavities appeared filled, and covered with a mixture of hairy and stony particles; from  
whence

whence I conjecture, that the bit of bone probably was the *nucleus* of the stone.

NOTHING remarkable occurred during the cure, but that the patient ever since the second day after the operation, was capable of retaining her urine ; and recovered perfectly in less than three weeks after the operation was performed.

SINCE the performance of the preceding operations, I have always followed the same method of dividing a part of the *urethra* in females, previous to the introduction of the gorget, &c. and have found it to be much more easy to the patient ; less troublesome to the operator ; and more successful than when performed by a forcible dilatation of the *urethra* without incision.

## C A S E XLV.

*A remarkable Instance of four rough Stonies that were discovered in an human Urinary Bladder, contrary to the received Opinion ; and successfully extracted from thence by the lateral Method of cutting for the Stone. Communicated to the Royal Society, and inserted in their Transactions for the Year 1759.*

THE favourable reception those few papers have met with from the *Royal Society*, which I have done myself the honour of addressing to them, encourages me to take the liberty of offering the following account to their consideration ; and I am the more immediately induced to submit this paper to their perusal ; as the fact hereafter related cannot be considered as a matter of mere curiosity : since it is probable, that the inferences deduced from the history of the subsequent case, when properly attended to, may prove of the greatest consequence to the future ease and health of such unhappy patients as labour under the like misfortune ; as well as be a means of preventing the operator from falling into such an error, as cannot fail of drawing an imputation upon



upon his character in the practice of one of the most capital, and difficult undertakings in his profession.

IT is a maxim laid down by the most judicious and best received writers upon operations in Surgery, that when the surface of a stone, which has been extracted from the bladder, appears to be totally rough, it amounts to a proof, that there is no other stone accompanying it: but notwithstanding I admit it is from experience found, that this observation is in general well grounded, it will nevertheless appear from the following case, that this rule is not without exception: for which reason, it must doubtless be thought right, that we should not be determined from circumstances only; but on the contrary, that it is necessary for every Surgeon to take such methods during the operation, as will enable him to judge with that degree of certainty, without which he cannot be enabled to do.

THE methods I would recommend are these; that after the extraction of a stone from the bladder, though the whole of its surface be rough, the operator should nevertheless introduce the fore-finger of his left or right hand through the wound into the cavity of  
the

the bladder ; by which means, if the subject be under 12 or 14 years of age, he will be enabled to come in contact with every internal part of the bladder ; but if the subject be an adult, and of a corpulent habit of body, the finger under these circumstances not being found sufficiently long for that purpose, he must have recourse to the use of a female catheter, or some other instrument that is slightly curved, quite smooth and polished : and of about nine or ten inches long : which will serve the purpose equally well, if of a proper form and thickness.

THIS is the method I have of late years pursued upon the like occasions, without giving any pain to the patient, or considerably retarding the operation.

SINCE I have had an opportunity of making the following observation, as well as a prior observation something similar to this, where two rough stones were extracted by me a few years ago from a young man's bladder of 15 years of age (and which it may be remembered I have stated in a preceding case) I cannot help suspecting, that there may have been instances of one or more stones being left behind in the bladder at the time of operating, merely  
from

from the operator's putting too great a confidence in this general rule : which suspicion I am led into, from having known people who have undergone the operation of cutting for the stone, relapse into the same disorder in a short time after the healing of their wounds ; attended with such symptoms as have obliged them to submit to a second operation : when the stone upon being extracted has appeared of so considerable a size as to render it at least very suspicious, that this stone must probably have been of a much longer growth than the short time betwixt the two operations could admit of.

THE maxim laid down to us by authors of a smooth and polished stone in the bladder being never there alone, but always accompanied with one or more stones of the same kind, I know no exception to ; but if this phenomenon should ever occur, the strict observance of that rule delivered to us by judicious writers in Surgery of always searching the bladder under the like appearances, on presumption of one or more stones being left behind, cannot be accompanied with any future mischief to the patient, when cautiously executed by the methods recommended above,

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and

and should undoubtedly be always attended to. The smooth and polished appearances of the surfaces of human *calculi* are universally supposed to arise from their rubbing against each other, whilst they are confined in the bladder, which may with reason be supposed to be the case; but I confess this inference is not quite satisfactory to me: since it is probable, if this was the sole cause of their smoothness, the same effect would always be produced when attended with the same degree of friction; but as this may be considered as a matter of mere suggestion, I refer the decision of the point to those of nicer speculation, it being quite sufficient for practitioners to advance matters of fact.

## C A S E. XLVI.

**M**R. *W. W.* a gentleman farmer of a corpulent habit of body, in the 46th year of his age, now living in the parish of *Udimore*, within three miles of *Rye* in *Sussex*, was attacked about eight years ago with severe complaints in his loins, accompanied with an incapacity of voiding his urine without the assistance of proper medicines: which were administered

to



to him by a neighbouring Apothecary for that purpose.

THESE medicines had the desired effect. They promoted a secretion, and an evacuation of urine ; the urine was loaded with a considerable quantity of gravelly particles mixt with *mucus* of a whitish colour. In the space of three weeks he had perfectly recovered from this attack ; and continued well for near five years afterwards, without any return of his complaint ; except when he rode hard on horseback ; or drank more freely of strong liquors than usual. At the expiration of five years, he was seized with an acute fever, of which he recovered in a few weeks. Very soon after his recovery from this illness, he began to complain of excessive pain in voiding his urine, or upon going to stool ; these symptoms were so greatly encreased for many months before he submitted to the operation, as to disable him from riding ; from walking ; or from using any kind of exercise, without aggravating his complaints : his urine of late was continually and involuntarily flowing from him in small quantities. He complained of great pain, and foreness in his fundament, attended with a *tenesmus*. This account he delivered to me

on the second day after the operation; and at the same time very feelingly told me, that he had enjoyed but few and short intervals of ease for the three last years till since the operation. Having first prepared him for the operation in the manner I usually do upon the like occasions; that is, by keeping the patient upon an abstemious diet, a week or ten days before the operation, by bleeding if the patient be plethoric, by giving two or three purges of oil and manna at two or three days distance from each other, and an oily purging clyster the night preceding the operation, or very early on the same morning of the operation. On the 30th of *January* 1758, I cut him at his own house in *Sussex*, and extracted from his bladder the four rough stones which I have now the honour of exhibiting to the *Royal Society*: and which, at your request, I have caused to be engraved, that this Memoir might be made more compleat and useful than it otherwise would have been. The surfaces of these four several stones appear to be rough, and have not the least marks of having rubbed against each other during their confinement in the bladder: but yet I conjecture this must have frequently been the case, as there was

no difficulty in embracing these *calculi* with the forceps ; for had they been contained in different cells or pouches, as has sometimes been observed from dissections ; this circumstance, must have rendered it impracticable for me to have so immediately got at them, if at all.

THE forceps was introduced three times only into the bladder for effecting the extraction of the three first stones ; and twice only for the extraction of the fourth stone : besides the four stones which I have presented to the *Society* for their inspection, I thought it not improper to produce at the same time some other human *calculi* for their farther satisfaction ; each of which was found single in the urinary bladders of different subjects : the surfaces of these stones may be observed to be much smoother than the surface of either of the four stones that were extracted from Mr. *W*'s bladder in the operation I have just now recited ; and therefore it was more reasonable to expect to find each of these stones accompanied with one or more stones in the same bladder (according to the generally received opinion) than it was to find more stones than one in the case of Mr. *W*. which has given rise to this observation :

but as the fact before us does sufficiently shew the impropriety and danger of absolutely determining from the surfaces of such extraneous bodies, I think it needless to enlarge upon this subject, to strengthen those precautions so reasonable to be attended to in this operation : however, as I have already taken notice of the smooth and polished appearances of the surfaces of such stones as are probably never found single in the bladder, I have produced two stones of this kind that were extracted from one and the same bladder, to shew that these stones do no more resemble those stones of Mr. *W*. than a piece of polished marble can be said to resemble a rough block of the same species.

MR. *W*'s wound was healed in seven weeks after the operation ; ever since that time he has continued perfectly well.

#### R E M A R K.

IN the performance of the operation upon males for extracting the stone out of the bladder by the lateral method of cutting, it has generally been advanced in favour of this practice, that the lateral method is preferable  
to



to that distinguished by the name of the old way, or *Marianus's*, on account of the incision being made near to the beginning of the *urethra*, or neck of the bladder ; by which means the forceps, when introduced into the bladder, is more easily and freely managed ; and the force requisite for the extraction of the stone is less violent, from the resistance being diminished in proportion to the size of the wound, and openness of the passage : and again, that all wounds which are made with a sharp instrument, are less dangerous in themselves, and more easily cured, than such as are made by force and laceration ; for these approved reasons it was supposed by Mr. *Chefelden*, when he first attempted to put this method in practice, that if the wound could be made still lower down, that is, on the other side of the *prostate* gland, into the bladder itself, there would still be less violence required in the extraction of the stone or stones, and the operation might be more readily executed ; which he contrived to do, by first injecting the bladder with warm water ; and his expectations were fully answered in these particulars ; but after having tried this method upon ten patients ; who, for some days after

the operations, seemed out of danger, he found the urine which came out of the bladder, by continually lodging upon the cellular membrane on the outside of the *rectum*, made fœtid ulcers, attended with a vast discharge of stinking matter ; and from this cause, Mr. *Chefelden* says, he lost four patients out of ten. For these reasons, he discarded the use of injections, and pursued that method which is now followed in our Hospitals ; and for which we are so much indebted to the ingenuity and labours of this great man.

SINCE Mr. *Chefelden*'s time there have been various instruments invented and employed to the same purpose he intended : the instrument which I have a few times made use of is the gorget that is made to cut with its right side or edge.

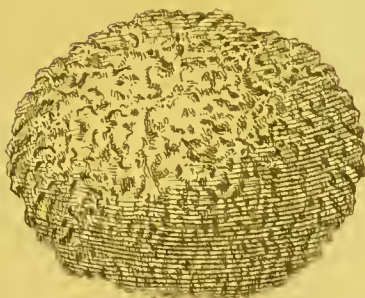
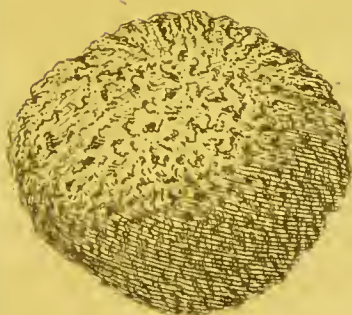
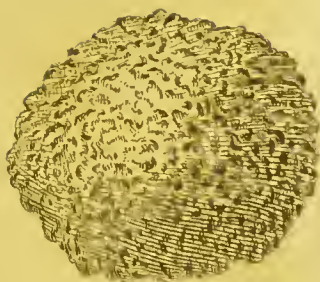
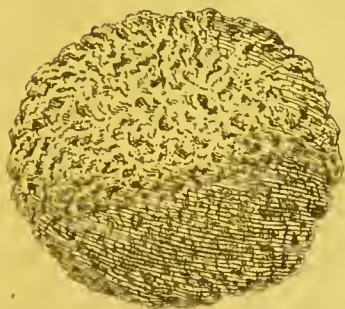
IN those trials which I have made with this instrument, I found it very well answered the design of dividing a part of the *prostate* gland and neck of the bladder : and I thought the extraction of the stones was made more easy by these means ; but in two subjects amongst the few upon whom I used the cutting gorget, I at length discovered that the urine did not escape so readily out of the wound as could have

have been wished ; and at the end of about sixteen or seventeen days I observed the *intestinum rectum* was in part destroyed in both these instances ; that a part of the excrement began to pass through the wound, and the urine which discharged itself into the *rectum* from the communication that was now formed betwixt the bladder and gut produced almost constant gripings, a *diarrhœa*, and a considerable wasting of the whole body ; however, both these patients perfectly recovered ; but their wounds were not healed for some months afterwards ; from hence I judged that although this might justly be considered as an ingenious contrivance, and undoubtedly an useful instrument so far as related to the enlargement of the internal extent of the incision, yet the inconveniencies following this method were such as have prejudiced me in disfavoured of the farther use of it ; and if I mistake not, the knife alone can always be used to sufficient advantage, with which the incision may be made large enough, and low enough, to admit of the extraction of a stone of ten or eleven ounces weight ; which are very uncommon sizes, and such as have not happened to me to see more than two or three instances

instances of in the course of very many years experience in an hospital. These operations required no other instrument than the knife for making the incisions : however, I own it is possible that the inconveniencies I have attributed to the cutting gorget may not have happened to others, and that they might even not have happened in either of the two cases I have taken the liberty of mentioning, had not the patients been necessarily confined to their beds for more than a fortnight after the operation ; since if it had been in their power to have set upright, the wound would have become depending, and the urine of course have been more readily discharged than it could be when lying in bed.

BUT notwithstanding I have objected to the use of the cutting gorget in the operation for the stone upon males, I am very certain from those trials I have made with it in females, this instrument will be found useful and advantageous to divide the *urethra* with, previously to the extraction of the stone in that sex ; especially when the stone proves to be a large one ; but even in this operation, I must own, from the several experiments which I have made with the cutting gorget,  
I think





*This Plate is an exact representation of the Sizes and external appearances of the four rough Stones described in the preceding pages.*



I think a small incision knife is a more manageable, as well as a less painful instrument than the cutting gorget for this purpose: since there can be no necessity for dividing the whole length of the *urethra*; but only the hither extremity of it, so far as the *corpus glandosum urethræ* extends: in this part the *urethra* is naturally more contracted than it is in any other part that is higher up, or nearer to the neck of the bladder.

# CASE XLVII.

*The Case of a Patient, who voided a large Stone through the Perinæum from the Urethra, Communicated to the Royal Society by Mr. Joseph Warner, Surgeon, of Guy's Hospital, to whom this Memoir was addressed, for that Purpose, by Dr. Frewen, of Rye, in Suffex.*

**H**ENRY Taught, of Hastings, in Suffex, aged seventy-six, a strong hale man, and naturally of a good constitution, was never subject to any nephritic or gravelly complaints for almost seventy years; but enjoyed, for the most part, a good share of health, (though he had

had been exposed, the greatest part of his lifetime, as a mariner, to the irregularities and inclemencies of that element, to which his occupation engaged him) till about six or seven years ago, when he had some gravelly complaints, and uneasiness in making water; which increased upon him progressively; and, for the last two years, he had so much pain in sitting, that he was obliged to use a perforated chair, made for that purpose. But, for some months past, his increased pain would not permit him to sit at all, even at his meals, which he used to take either standing or lying. When he first came to be in this painful situation, there appeared a prominence on the right side of the perinæum, towards the hinder part of the scrotum; which, increasing by degrees, felt hard and superficial for some time; and the parts all about it grew so extremely sore, and tender, that, at length, on the 24th of September last, upon his getting out of bed, a laceration thereof happened; and the stone, herewith shewn to this learned Society, was voided, falling down upon the floor.

Five days after this happened, I went to see the patient, in order to get a perfect knowledge



knowledge of the circumstances of the fact; the particulars of which I then communicated to my worthy friend Mr. *Warner*, surgeon, of *Guy's* hospital in *London*; who returned me a satisfactory account, from his own observations, of the manner by which a stone is contained in the *urethra*, &c. which I shall take the liberty of inserting, after submitting to the superior judgment of this Society, a short account of what I apprehended to be the original process of nature, in the production of such a phænomenon.

Dr. *Boerhaave* hath observed, from experiment, that if a quantity of recent urine be set, to digest in a tall glass, with a heat no greater than that of a healthy man's body, for the space of three or four days, it will continually grow more and more red, fœtid, cadaverous, and alkaline, throwing off a stony matter to the sides of the vessel. From whence we learn, that calculous matter, by too long a detention of this excrementitious fluid in the bladder, may be easily generated; and a small portion thereof, in its discharge from thence with the urine, may happen to be obstructed in the passage of the *urethra*, so as to be incapable of getting either forward

or backward, and thereby become the basis of a stone; which, increasing by the urinous supplies, may be accumulated to as great a bulk as the part containing it will admit of.

Now, “the *urethra*, in cases of this kind,” according to the observation of my learned friend, “becomes a cyst, which cyst acquires a great degree of hardness, and remains compact and whole, till an inflammation is produced by its incapacity of admitting any farther distension; which inflammation is soon after communicated to the integuments: by which means they become painful, tender, and are easily lacerated.” And this description seems to correspond exactly with what hath happened in the case of this old man.

Ever since the stone came away, this patient hath discharged no urine but by the wound; which, when I last saw him, was so much contracted, as to be no bigger than to admit into it a small finger, and the parts were grown callous about it. I would have recommended him to proper care on that occasion; but he would by no means hearken to me; seeming to be very happy in being freed

freed from the cruel burden of the stone; and not regarding, I suppose, at his time of life, whether he could be helped in the discharge of his urine any other way.

*Hatton-Garden, London, Nov. 12, 1761.*

AS I am desired by Dr. *Frewen*, in a letter to me, bearing date the 7th instant, to add whatever I shall think expedient to his Memoir, I have, in consequence of this request, taken the liberty of observing, from a former letter of Dr. *Frewen* to me, bearing date the 17th of October last, that when this surprizingly large *calculus* was first voided, which was on the 24th of September, 1761, it weighed six ounces and two drachms; that on the 29th of the same month it weighed six ounces, wanting one drachm and fifteen grains. On the 11th of October following, it weighed six ounces, wanting three drachms and one scruple. On the 17th of the same month, it weighed six ounces, wanting three drachms and half.

Give me leave to add farther to this paper, by observing, that, about March last, I produced two very remarkable *calculi* to the Royal Society, for their inspection; when  
they

they did me the honour to desire a written account of the case of the person, in whose *urethra* they were lodged. The whole of what I think worth troubling the Society with, upon this occasion, is, that they had been for many years lodged in the *urethra* of one *Robert Bolley*, a young man, aged about twenty-two, and that they had produced no inconvenience, or pain, till of late, when the integuments began to inflame; which inflammation commenced not long before he was put under my care. The consequence of this change in the parts was extreme torture; a severe symptomatic fever; great wasting-away of the whole body; and almost a continual and involuntary discharge of small quantities of urine.

The miserable object I have been just now describing, was recommended to my assistance, by my ingenious friend and acquaintance *Dr. Wollaston*, of *Bury*, in *Suffolk*, in whose neighbourhood this patient lived: and from whence he was conveyed to *London* in a waggon.

The parts were then arrived to so great a degree of distention, inflammation, and tenderness, that, upon the journey, they burst, and



and there was discharged through an opening made in the perinæum (that is, the space betwixt the *anus* and *scrotum*) one of these stones; the other stone remained firmly fixed in the *urethra*, which I easily removed, having first cut away as much of the diseased integuments, and of the *acceleratores urinæ* muscles, and distended *urethra*, as I judged necessary to be removed for this purpose. After the removal of these parts, I brought together the lips of the wound, and kept them so, by means of that *suture*, which surgeons call the twisted *suture*, till the parts were united: which was effected in about a fortnight. Before the suture was applied, I introduced a ductile instrument, of a convenient size, through the *penis* into the bladder; by which means, the passage was kept equally distended.

This operation so effectually answered my expectation, as totally to remove the incontinence of urine, as well as every other symptom that had attended the complaint; and the patient was, in a short time, restored to his usual healthy state and corpulency.

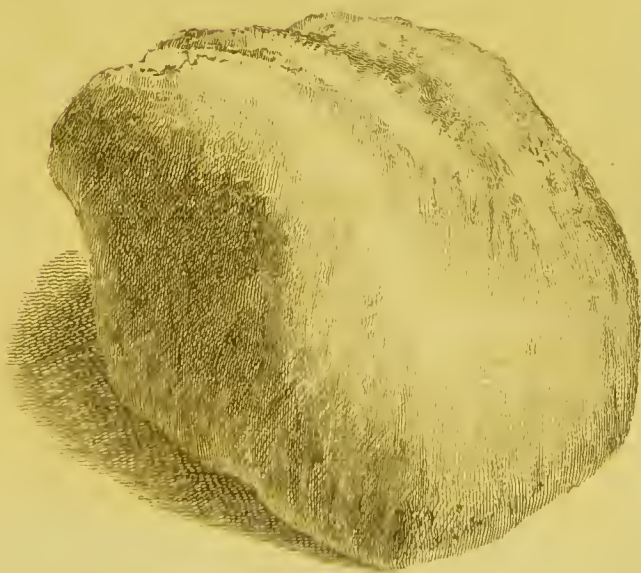
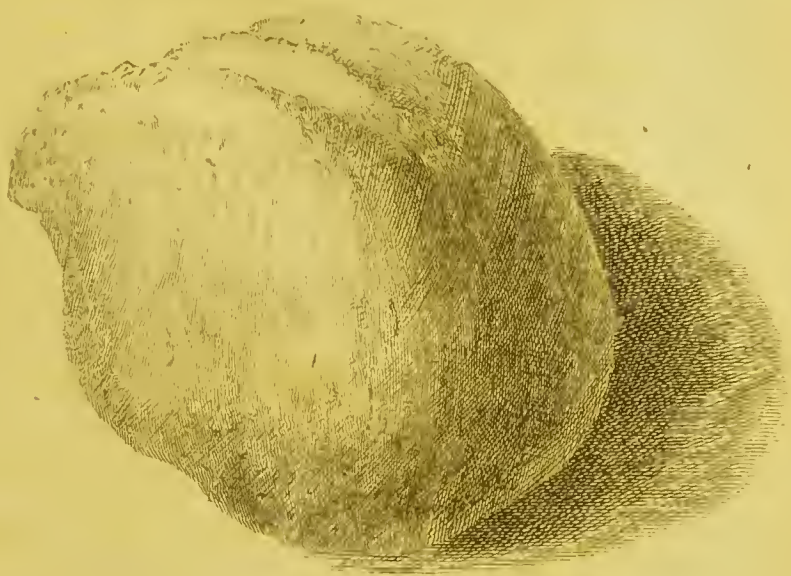
N. B. In the two instances I have just now related, as well as in the case of *Thomas Bing-*

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*ham*, whose history I communicated to this Society, on the 13th of December, 1759, (vide Philosophical Transactions for the year 1760) I must observe, that these patients, according to the best information I could get, were never attacked with a suppression of urine, or a regular fit of the stone; for which reasons, I conclude, that the formation of these *calculi* did originally commence in the *urethra* itself, and that the stream of urine, in its course from the bladder through the *penis*, had gradually formed those grooves, or channels, so apparent on the surfaces of these compact and hard bodies, over which the urine was occasionally voided; by these means, a passage for the urine always remained open and unobstructed. [*Vide Tab. IX. & X.*]

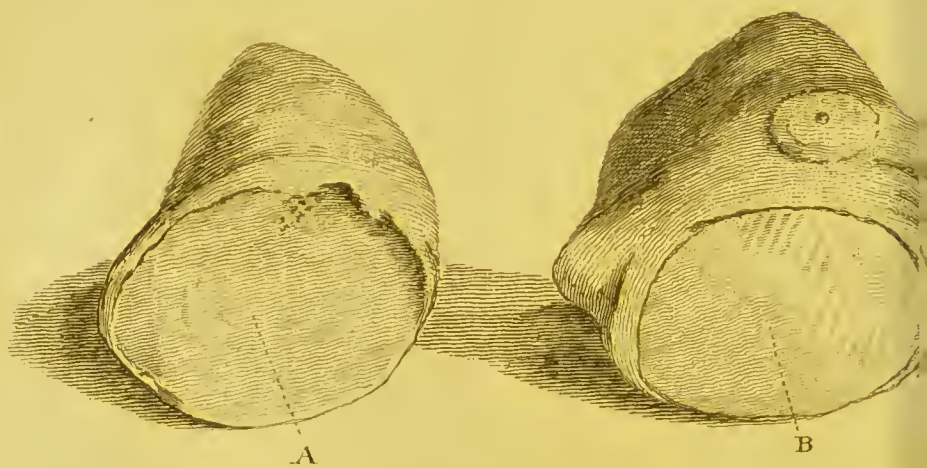
Plate IX. represents the size, shape, and appearance, of the stone, in different attitudes, with the grooves on its superior surface, that was voided through a laceration of the *perinæum*, as has been above described, in the case of *Henry Taught*, of *Hastings*, in *Sussex*.











A

B

Plate X. represents the two stones that were lodged in the *perinæum* of *Robert Bolley*, a young man of twenty-two years of age, as has been already mentioned, with their polished surfaces.

A and B, where they came in contact with each other.

In the same plate, are these two stones joined together, with their several eminences and depressions, and as they lay in contact with each other in the *perinæum*.

## CASE XLVIII.

*Of a Retention of Urine occasioned by the Size of the Hymen.*

IT has been observed by writers, that a straitened prepuce in males, penetrated by so small a hole, as to prevent a free discharge of the urine, is in many instances productive of such symptoms as are similar to those arising from a stone in the bladder; these symptoms are probably occasioned by a distention of the prepuce; an irritation of its internal surface, and of the external surface of the *glans penis*. The removal of these complaints depends upon a longitudinal division of the pre-

puce; or upon circumcision, by which means a free issue is procured to the urine. But I do not remember to have read any observation of a disease of the like kind happening to females, and producing the same symptoms, from a preternatural formation of their parts: for this reason the following observation may be of use.

IN the year 1740, I was consulted in the case of a little girl about three years old, who had long laboured under such severe symptoms in voiding her urine as to make it suspected by her Physician, that she had a stone in her bladder. Upon enquiry, I was informed that her urine came away by drops, that she was inclined to put her hand to the *pudendum* when she made water, and that at that time, she could not help crying, and stamping with her feet. These symptoms so nearly resembled those of the stone, that I thought proper to propose the passing a staff into the bladder, that we might be satisfied whether there was a stone, or any other disease of the *urethra*, or bladder; but upon endeavouring to do it, I observed the *urethra* was at least half covered over with a continuation of the *hymen*, which appeared imperforated;



perforated ; for this reason, I could with difficulty execute my design. However, I effected the introduction of the instrument into the bladder, without using much violence ; but there was no stone nor any other præternatural appearance to be discovered in the bladder, or the *urethra*: for this reason, I pronounced that the difficulties and pains which arose in discharging the urine, probably proceeded from the size and situation of this membrane ; which I divided by incision with a small knife, in the following manner. The infant being placed upon her back, and properly confined upon a table of a convenient height, in the same manner as is done in the operation for the stone ; I divided the membrane with a small knife, by making a longitudinal incision, and the patient was cured in a few days, by anointing the parts with sweet oil, assisted with an emollient fomentation.

REMARK.

If the circumstances of a difficulty in making water had not occurred, so as to have made it necessary for the parents to seek for

relief during this infant state ; it must have happened that at the time of puberty, the menses could not have been voided ; so that the Surgeon must have been then obliged to have divided this membrane, to have given issue to what must have been otherwise confined ; as has been known to have been sometimes the case, where this membrane has been found imperforated in adults. Vide Case 54.

## C A S E   X L I X.

*Of an Amputation of the Penis.*

**T** C. aged 63, about four months ago perceived a small pimple to arise upon the *glans penis*, which continued without pain for six weeks. At the end of which time it grew painful, and increased in size : which obliged him to apply to a neighbouring Surgeon for relief. The first applications made use of to the part, were *emollient cataplasms* : which were continued for a fortnight, but without any other effect than keeping the part easy, and preventing an increase of the symptoms. Seeing this, he was induced to apply a *caustic* to the excrescence, which brought  
on

on excessive pain, and produced an ulceration; and from that time the tumour began to grow considerably worse.

ON the 3d of *August* 1749, he was admitted into the Hospital. Upon examination the whole *penis* was found cancerous, and considerably enlarged to within about an inch and half of the *abdomen*, attended with excessive pain.

IT had for the last four weeks discharged so greatly, as to weaken him considerably, and had bled at times, but not very profusely. On the 7th instant it was amputated near the *abdomen*, in the following manner.

A *TOURNIQUET* was applied on the *penis*, as near the *abdomen* as possible, and an incision was made first through the integuments only; which were drawn back, and then a second incision was made as near as possible to the integuments through the *corpora cavernosa*; there was no instrument introduced into the *urethra*, nor was there much difficulty in stopping the *hæmorrhage*, which was effected by the needle and ligature.

A FEW hours after the operation, he urined freely, and from this time continued to go on very well till he recovered. But in a few

months afterwards he relapsed into the same disorder, and died.

A SIMILAR Case to this is mentioned by *Ruyfch* in his 30th Observation; but there the operation is described as being performed in a very different manner, as follows: a catheter was introduced through the *urethra* into the bladder, and confined by a proper ligature from slipping out; after this, a ligature was made very tight upon the *penis* above the diseased part; the next day, a second ligature was applied upon the first; and in five days after, the *penis* was amputated with a knife in the same part, which had been almost wore through by the ligatures.

THIS method was made use of, in order to prevent an *hæmorrhage*; for he observes, that by this means, the part became almost mortified off, and no bleeding ensued. But as this method must be infinitely more painful than what attends the operation, when performed by incision only, I think there can be no doubt which of the two is preferable. Mr. *Ruyfch* observes, that the patient did well, and continued so. He says, that part of the *penis* which was left behind drew quite back into the *abdomen*, so that he was obliged to  
make



make use of an ivory pipe, which was occasionally introduced through the *urethra* into the bladder, to prevent the inconvenience of being wetted by the urine.

REMARK.

IT is worth observing, what different effects were produced by the emollient and caustic applications in the preceding case. The first it appears, kept the parts easy, and prevented the disease from increasing, though it had no farther tendency to the cure of the wound. But the latter, which was painful, immediately aggravated the symptoms, and considerably increased the inflammation and ulceration. This case is one of the many, which shews the impropriety of all painful applications to ulcers that are attended with the like malignancy; and at the same time the great advantages of such as are emollient and relaxing.

FROM the event of *Ruyseb's* case, we may learn the possibility of success after the like operation; though it must be acknowledged, that the instances are rare where the patient does not relapse into the same disease.

CASE

## C A S E L.

*Of the good Effect of medicated Bougies, in Diseases of the Penis and Scrotum.*

*P*. E. in *August*, 1731, contracted a Clap, which he neglected till the *March* following, when there appeared a swelling in the *scrotum*, which suppurated, and was opened by incision. He was at the same time put under a course of physic; but notwithstanding this treatment, soon afterwards there appeared a second swelling on the *scrotum*: which suppurated, and was likewise opened; his urine issued through the wound, and continued to do so for four months, when the wound healed up.

THERE was a purulent discharge from the *penis* the whole time, attended with frequent inclinations to urine, which came away sometimes by drops; at other times in a small twisted stream tinged with blood, and attended with excessive pain. The patient remained pretty nearly in this state, till *August*, 1747, when he perceived a swelling to arise in *perinæo*: this obliged him to apply for further advice.

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The tumour suppurated, and was opened by incision, and the patient was salivated. But notwithstanding all proper care having been taken of the wound, it remained fistulous.

HE was admitted into the Hospital, the first of *December*, 1748. Upon examination, I discovered two fistulas in *perinæo*, and two more in the *scrotum*: through which the greatest part of the patient's urine was discharged. The *scrotum* was enlarged to four times its natural size, and appeared anasarcaous.

THE whole *penis* was distorted, and its integuments extremely thickened. Upon introducing a probe into the *urethra*, I discovered an obstruction about an inch and a half distant from its hither extremity, which I could not break through. The day following, I introduced a medicated candle, which was kept for some hours in contact with the obstruction; it produced a considerable discharge of matter; the bougie was continued for some hours every day for about a week, when the obstruction gave way. A little farther up the *urethra*, there was a second obstruction; this was removed in a few days by the same means. After having surmounted these two difficulties, I met with a third near the entrance

trance into the bladder. This obstruction in ten or twelve days was removed by the same application ; so that I could now introduce a small bougie quite into the bladder. The bougies first used were very small : not larger than a common knitting needle ; but their sizes were gradually encreased, till I could easily introduce those of the size of a goose-quill.

FROM the time the bougie was introduced into the bladder the fistulas grew better, the tumour of the *scrotum* gradually subsided, and in about five months the patient was perfectly cured, the parts appearing in their natural state. The swelling of the *scrotum* was formed in consequence of the urine having insinuated itself into the *cellular membrane* of that part. I saw the patient at the end of several years after his cure, he was then perfectly well, and had not perceived the least return of his former disorder. Before he left the Hospital he could urine in as full and large a stream as though he had never been diseased, and was well in every other respect.

THE inference I would draw from the preceding Case, is to prove the great usefulness



ness of Mr. *Daran*'s method of treating these diseases; and at the same time to shew, that it is undoubtedly certain, that whatever applications will produce a discharge, and gradual distention of the part, must probably be attended with nearly the same success, if continued a proper time. The composition of the bougies made use of in this extraordinary case, was, one ounce of old *diachylon*, and two drachms of *mucilage* plaister, slowly melted together; to which was added a drachm and half of white *precipitate*, which being stirred together, and afterwards spread upon rag, was cut into slips, and rolled up in a conical form for use.

I HAVE several times since then made use of the same plaister, with an addition of one drachm and half, or two drachms of *calomel*, or red *precipitate*, finely levigated and stirred into it, in a variety of cases with equal benefit; and could never discover any material difference, either in their efficacy, or manner of operating.

## C A S E LI.

*Of the Hydrocele of the Tunica Vaginalis.*

IT has already been said, that the testicles are each of them immediately and separately invested with a strong and sensible membrane, which from its colour is called by Anatomists the *tunica albuginea*. These coats adhere so firmly to the testicles, that they cannot easily be parted from them.

FROM the distention and inflammation of the *tunica albuginea*, it is probable that the principal part of the pain proceeds in an enlargement of these glands in an acute disease, or a schirrous state of them.

NEXT to and immediately above the *tunica albuginea*, is situated a small bag called the *tunica vaginalis*, which in infancy communicates with the cavity of the *abdomen*: but in adults, the cavity of the *tunica vaginalis* is almost always divided from the cavity of the *abdomen* by the adhesion of the internal *lamella* of the *tunica vaginalis* to the spermatic chord below the perforations of the abdominal muscles, which by this means forms a *septum*, unless that *septum* be destroyed

stroyed in consequence of an *hernia scrotalis*, as is sometimes known to happen.

THE *tunica vaginalis* loosely invests, and contains the *tunica albuginea* and testicles ; and is a process of the *peritonæum*.

THE internal surface of the *tunica vaginalis* is naturally smooth, and together with the external smooth surface of the *tunica albuginea* is moistened, and lubricated with a serous or a lymphatic fluid. This moisture serves to facilitate the motions of the testicles, and to prevent the *tunica vaginalis* and *tunica albuginea* from adhering together. In a sound state of the *lymphatic* vessels of these parts, the liquor of the *tunica vaginalis* is so small in quantity, as, in general, to have the appearance only of besmearing the surfaces of both these coats ; but in a diseased state of the vessels, proceeding either from a preternatural relaxation, or rupture of the *vasa exhalantia* of the *tunica vaginalis*, or from an inability of the *vasa inbalantia* or *absorbentia* to perform their usual functions, of receiving and of returning the secreted lymph into the course of the circulation ; or perhaps from both these causes, this fluid becomes in general, gradually and slowly accumulated, and sometimes

times suddenly in such considerable quantities as in some instances to amount to several pounds weight ; which, by distending the *tunica vaginalis*, and the thin fleshy coat lying immediately upon its superior and external part (called by Anatomists the *cremaster* muscle) together with the *scrotum*, forms a considerable tumour, or enlargement, known by the Greek term *Hydrocele* ; or the Latin appellation *hernia aquosa*.

IN order to enable practitioners to distinguish this kind of disease from any other tumour to which the coats of the testicles, or the testicles themselves are liable, authors of the greatest reputation have described a few particular symptoms (amongst many others) which they have supposed to be certain criterions or indications of this distemper ; to wit, the transparency of the tumour, and its freedom from pain : but though it must be allowed, that these are some of the most certain indications that can be related for forming a true judgment of the nature of the disease, they are by no means infallible ones ; there being in nature such considerable *intestinal hernias*, and enlargements of the testicles themselves as without any schirrous  
or



or inflamed appearances seem very much to agree in their principal symptoms with those attendant upon an *hydrocele*; to wit, in form, in size, in transparency, and in exemption from pain. Instances of which last disease I have lately had under my care, where the tumour of the testicle was large, smooth, uniformly distended, elastic, and terminated a little before its arrival at the *abdomen*. The patients had no pain in the part affected, nor had they any other inconvenience arising from the swelling, but such as proceeded from its size and weight upon using exercise.

UPON holding a lighted candle on one side of the *scrotum* in a dark place, and looking at the tumour on the other side, a perfect transparency was perceptible. From these appearances so common in an *hydrocele* of the *Tunica vaginalis Testis*, where the disease is not accompanied with a preternatural thickness of the coats, or, with a turbidness or bloody discolouration of the contained fluid, it would have been almost impossible not to have been mistaken in the nature of this complaint, if upon a careful examination of the parts, it had not appeared, that no fluctuation could be discovered by the feel; which I am con-

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vinced sometimes requires the greatest accuracy and judgment absolutely to determine.

HOWEVER, that I might not give a positive opinion of the nature of the disease, without making a more certain enquiry; after having for several weeks used fomentations, mercurial frictions, and repellant cataplasms to the part, joined with brisk purges, and emetics administered at proper intervals, without any effect, I resolved, with the consent of the patient, to puncture with a lancet the inferior part of the tumour: but there issued not the least discharge of water, or any other kind of fluid through this aperture; nor was the experiment attended with any other inconvenience than a slight inflammation of the edges of the wound; which inflammation was in a few days removed by rest, and the application of emollient cataplasms.

THE patient continued under my care for some weeks after these several trials had been made to remove the disorder; but the tumour remained in the same state I found it when I first examined the part. Upon dismissing the man I advised the application of a bag-truss, with which the part might be suspended, and protected from external injuries.

IN

IN regard to that maxim delivered to us, of there being no pain in the *hydrocele*, when the tumour is in its beginning, and the coats of the testicle are not much distended; though I am convinced from many observations that this maxim is generally true, yet I have known several exceptions to this rule; and I have seen instances, where from the enlargement and the painful sensations of the part (probably arising from the pressure made against the *tunica albuginea* and the testicle itself; on account of the *tunica vaginalis* stubbornly resisting any farther distention) it has been thought adviseable to extirpate the testicle on presumption of that being the part aggrieved; when, upon making an incision through the coats of the testicle, a quantity of lymph has suddenly gushed out; the Testicle has appeared of its natural size and complexion: and the true cause of the complaint has from this accident shewed itself, and happily terminated in an absolute cure; without the operation of castration.

For these reasons I think it expedient to make a puncture in the tumour with a lancet, previously to a procedure to the operation of castration, where the disease is com-

plicated and doubtful ; which must often be the case with those Surgeons whose experience has not furnished them with opportunities of seeing many diseases of this kind ; and this precaution, I think, is the more strongly to be recommended, as the puncture is attended with very little pain ; nor need be any delay to a procedure to castration, should that operation afterwards be found necessary.

IN regard to the operation of castration, as I have nothing particular to say in this place upon the subject of those diseases which require the extirpation of the testicle, but what immediately relates to the operation itself, I think it quite sufficient to observe, that in the several subjects whom I have of late years castrated, I have not been under a necessity of making any ligature upon the whole of the spermatic chord, nor always upon the spermatic artery. By experience, I have found this process of tying the spermatic chord to be unnecessary ; and as it is by much the most painful part of the operation, undoubtedly it should be omitted.

IF we reflect upon the smallness of the diameter of the spermatic artery, the distance at which it arises from the testicle (in general from the *aorta descendens inferior* a little below the *renal* or *emulgent* artery, but sometimes  
from



from the *emulgent* artery itself) we must necessarily conclude, that in a natural state of this vessel, the quantity of blood which is conveyed to the testicle in a short time can be but small; and therefore the risque of dividing the spermatic chord, (without first having tied it with a ligature, which is the common severe practice) can be none at all; even supposing it should afterwards be thought necessary to tie the spermatic artery: which is the only part of the chord that can at any time require this method of treatment; and this may just as easily be effected, and with as little hazard as the tying an artery of a finger, after the amputation of that part; which no Surgeon thinks of doing till the finger is removed from the hand.

IF it be said that the spermatic vessels in a diseased state of these parts are sometimes greatly enlarged, and therefore upon a division of them the *hæmorrhage* must be greater than it would be in a natural state of the spermatic chord; in answer to this, I reply, that under these circumstances, the operation should never be undertaken; that argument therefore will in course be of no weight.

IN on or two instances that occurred to me, after the division of the spermatic chord,

and where no ligature was made upon the part, I observed that no blood at all was discharged, contrary to my expectation, either from the artery or the vein; the chord in neither case was visibly diseased, and the patients did well.

THE method I have of late years sometimes made use of for staunching the blood after the extirpation of the testicle, is by making a gentle compression of the vessels for a few minutes betwixt my thumb and fore-finger; afterwards the application of a bit of lint to the mouths of the vessels has effectually answered the intention, without giving the least degree of pain: which should be avoided as much as possible in this, and every other operation in Surgery, where it can be done with safety. The artery of the *septum scroti*, as well as those other ramifications of the *pudicæ internæ* and *gluteæ*, (which are branches of the internal *iliac*, or *hypogastric* arteries, and are bestowed upon the *scrotum*) in some instances become a good deal enlarged, and require some pains and address in restraining the *hæmorrhage* proceeding from them, upon their being divided in this operation; but as the method of stopping the bleeding in these vessels must be the same as is practised in  
other

other arteries of the same size, it is unnecessary to say any more upon the subject in this place.

## C A S E LII.

*Of an Hydrocele.*

*J.* M. aged 63, in the beginning of the year 1749, about eight months before he applied to me, received a blow upon the *scrotum*, which in a few weeks afterwards began to swell, and continued to increase from this time without pain, till the 27th of *September* following: when he was admitted into the Hospital. The disorder appeared to be an *hydrocele*, or dropfy of the *tunica vaginalis testis*, which upon being tapped discharged about ten ounces of clear water. About a week after the operation, the water had collected nearly to as great a quantity as before; upon which, I performed the operation a second time. After the whole of the water was evacuated, I introduced a small sponge tent into the orifice, which was continued for twenty-four hours without producing any pain, or visible effect. Seeing this, I renewed the introduction of the tent: which

remained in the wound till the third day. During this time, there was no discharge at all. Upon examination, the *scrotum* appeared somewhat hardened and inflamed; on which account the tent was omitted, and a cataplasm of bread and milk applied to the part. On the fourth day, a small quantity of matter oozed through the orifice: the discharge increased considerably for ten days; when there appeared a small abscess on one side of the orifice; the abscess, upon being opened, discharged about an ounce of matter; from this time, the discharge decreased, and continued to do so till the wound was healed: which was in a few days afterwards. The coats of the testicle, and testicle itself, formed an adhesion with each other. It is observable, that the pain and fever which attended the cure were so trifling, as rendered it unnecessary for the patient to keep his bed longer than two days: this, in all probability, was owing to the gentle and gradual action of the tent upon the *tunica vaginalis testis*.

FROM the success that attended this method of operating in the preceding instance, I have been induced to perform the operation several times since in the same manner; most  
of



of which operations have been attended with equal lenity and benefit.

CASE LIH.

*Remark on the Hydrocele.*

FOR the relief of those who labour under this infirmity, there are two methods of treatment proposed; the one distinguished by the palliative method of cure, the other by the radical method of cure. The first, called the palliative method of cure, is the making a small opening into the most depending part of the swelling with a lancet, or a small trocar; which orifice must be cautiously kept open with the blunt end of a probe (if necessary) which is very seldom the case, till the whole of the fluid is evacuated; observing at the same time to press the tumour gently downwards to assist in the expulsion of the lymph; if a small Trocar should be preferred to the lancet for making the aperture into the tumour, this instrument will answer the purpose without the assistance of a probe; but the lancet, I am certain, is always preferable to the trocar, as it gives less  
pain

pain than the trocar, and is a more expeditious method: if the lancet be about twice the size of the common lancet that is used in bleeding. There is seldom required any other application to the orifice than a bit of dry lint, or a bit of lint spread with some cooling ointment, which may be secured upon the part with a piece of adhesive plaister: but if the patient will admit of the application of a bag truss to the *scrotum*, it will be found very useful by supporting the part, and protecting it from external accidents in the exercises of walking and riding; and will likewise be a means of preventing the disorder from returning so speedily, as it otherwise probably would do.

It sometimes happens in bad habits of body, from roughly squeezing the parts during the evacuation of the water, or from the *tunica vaginalis*, and testicle itself, being irritated by the introduction of the probe through the orifice of the coats, that an inflammation, abscess and fever, preceded by considerable pain, have followed this method of treatment; in which case, the tumour becomes very large, and hard; and requires great care, and judgment in the management of it:

it: under these circumstances of the disorder, the part must be treated with fomentations, emollient and suppurative cataplasms; the patient must be confined to his bed, be made to live upon spoon meats of the most innocent kinds, such as panado, thin milk-pottage, sago, &c. and to drink very freely of barley-water, with, or without lemon juice; or any other diluting liquor that may be more agreeable to the patient's palate; his body must be kept open with clysters; and if the fever should run high, and be attended with great restlessness, the use of cordial medicines will be found necessary: when the tumour and inflammation are so far advanced as to produce an evident fluctuation, the swelling must be opened on that part where the integuments appear most soft and yielding to the touch; observing to make your incision the whole length of the diseased skin: Should the integuments be very thin and much discoloured, a bit of them must be removed by cutting it away.

IN opening these abscesses, I have observed not only a considerable quantity of matter deposited in the *tunica vaginalis*, and cellular membrane of the *scrotum*, but after the matter has been discharged, I have sometimes  
pressed

pressed out, from the bottom of the *tunica vaginalis*, a considerable quantity of lymph, which I have found so inspissated as to resemble cold calves foot jelly: for the reason above given I have of late never made use of the probe in this operation; and at the same time I have avoided all rough pressure, as being totally unnecessary; when the large sized lancet I have recommended is made use of: which is the instrument I prefer for this purpose to the trocar, or to the smaller sized lancet.

THE second method of treating this species of tumour, called the radical cure, is the making a large opening into the body of the tumour by incision, or caustic: but the practice by incision, in my opinion, is the most adviseable of the two; because the incision is made in a moment, is in general much less painful than the application of the caustic; and the radical cure more certain.

THE method for performing the operation by incision is this.

THE patient being seated upon a chair or a stool; on the side of his bed, on the end of a table of a convenient height, or what is still more convenient, the patient may stand upright



upright till the incision is made : the operator must then support the tumour with his left hand : and with a round-edged knife, such as is used in the operation of cutting for the stone, must at once divide the integuments, the *Cremaster* muscle, and the *Tunica vaginalis testis* the whole length of the swelling, beginning the incision from above : by which means the contents will immediately be discharged. If the *tunica vaginalis* is become stiff like parchment, as I have sometimes observed it to be, the edges of this membrane will not contract and subside with the integuments ; but a part of it on one side or both will be left projecting out ; if that be the case, so much of the *tunica vaginalis* must be cut away, as is raised above the edges of the divided *scrotum* ; but if there be no projection of this coat, I would not advise any part of it to be dissected out, since this method will certainly render the operation more painful, tedious, and hazardous. I once knew an instance of a patient who had the appearance of good health, that underwent the operation of having almost the whole of the *tunica vaginalis* extirpated for the radical cure of this disease (which is the only instance I ever saw

saw wherein it was attempted) in consequence of this operation, the patient was seized with an acute fever : of which he died : for this reason, as well as because I never yet have seen any fatal consequences arising from the method I have proposed, I would advise, that the excision of the *tunica vaginalis* should never be attempted : and that the method of opening the swelling by a large incision should only be practised upon those who are of a good habit of body ; who have not exceeded the middle stage of life, and even in them not till the method I have proposed in the case of J. M. has been tried, and found unequal to the design. The method of operating with the seton has of late been strongly recommended ; but as experience proves the impropriety of this practice, I think it needless to say any thing more on this operation than this, that it is by no means advisable.

N. B. I have several times cured male infants affected with this disease in a considerable degree by gentle purges, and local applications only, without having recourse to an operation.

## C A S E. L I V.

*Of a Tumour growing on the inside of the Bladder, successfully extirpated. Inserted in the Philosoph. Transact. for the Months of April, May, June, and July 1750, printed Anno 1751.*

A N excrescence, or tumour arising from the internal coat of the bladder, is a disease, though not very common, yet sufficiently known to the curious in physick and surgery. But I believe that hitherto, no one hath attempted the cure of this disorder by extirpation.

NOR indeed can it be supposed that the instances are frequent, where the operation is practicable: But as it is notorious from the history of physick and surgery, that several disorders which were formerly unobserved, have been found frequently to occur, after their nature has been once discovered and exactly described; I flatter myself, the publication of this account, may possibly throw some light on the present subject.

M. B.

*M. B.* aged 23, on the 24th of *June* 1747, strained herself, by endeavouring to lift a great weight; she was immediately seized with a pain in the small of her back, and a total suppression of urine; which symptoms, notwithstanding the several methods used for her relief, continued till the 29th of the same month; when an eminent physician, and man-midwife was called to her assistance, who drew off her urine with the catheter.

DURING the suppression, she was seized with an acute fever: and for eighteen or twenty hours before her urine was drawn off, she discharged by the mouth a great quantity of saltish water tinged with blood; which, upon lying down, flowed in so great quantities as to threaten suffocation: This was undoubtedly occasioned by an absorption of the urine into the course of the circulation.

IN *April* 1750, she applied to me. Upon enquiry, I learnt she never had been able, from the moment of the accident, to void a drop of urine without the assistance of the catheter: which had been ever since made use of two or three times every twenty-four hours; that she was in continual pain, and had lately been much weakened, by having  
several



several times lost considerable quantities of blood, occasioned by the force made use of, for the introduction of that instrument into the bladder. Upon examining the parts with the fore-finger of my right hand, which I introduced with great difficulty through the *meatus urinarius*, I discovered a considerable tumour, which seemed to be of a fleshy substance, and took its rise from the lower part of the bladder near its neck; the extent of the tumour I could with difficulty reach. I observed it to protrude a little way out of the *meatus urinarius*, upon straining to make water when the bladder was full; but upon ceasing to strain, it presently returned.

THE tumour had preserved pretty nearly the same appearance ever since it was first taken notice of; and about eighteen months ago I learnt, that a small incision had been made into it, on presumption of its containing a fluid: but without any effect.

HAVING first prepared my patient, as is usually done before the operation for the stone; that is, by giving a gentle purge on the day preceding the operation, and an emollient purgative clyster a few hours before I operated, the *rectum* by these means became

X

emptied;

emptied; and the intestine consequently did not make so great a degree of pressure upon the inferior part and neck of the bladder, as it would otherwise have done: This gave me an opportunity of executing my design with much less difficulty than I should probably have met with in the performance of the operation, had I attempted it without this preparation.

This being done I proceeded to the extirpation of the tumour; which was effected in the following manner.

WHEN the bladder was full, I desired the young woman to strain as though she was going to make water; upon which, I perceived the tumour to protrude a little; this I effectually secured from returning into the bladder by the help of a crooked needle, and ligature, which I passed through the tumour in different directions; and endeavoured to draw it out through the *meatus urinarius*; but this could not be effected by reason of its size.

SEEING this, I dilated the *meatus urinarius* on the right side, by cutting it upwards about half way towards the neck of the bladder; when, by pulling the tumour forwards, I had  
sufficient

sufficient room for tying it with a ligature passed round its basis: which was very large.

FOR the three first days after the operation she complained of a good deal of pain in the *abdomen*.

ON the sixth day after the ligature was made, the tumour dropt off.

FROM the first day of the operation she voided her urine without any assistance, and is now perfectly well in every respect.

THE size of the tumour was nearly equal to a turkey's egg, and something like to it in shape.

## CASE LV.

*A remarkable Instance of two Excrescences of the Urethra, successfully extirpated.*

THE urinary passages of females, as well as males, are incident to some disorders, which are not to be cured or relieved but by surgical operations. These disorders in males proceed from different causes; which are generally to be accounted for from a previous venereal affection, or the frequent passage of gravelly or stony particles through

the *urethra*: though it is certain that they sometimes happen without any accountable cause.

IT seems to have been a matter of dispute amongst surgeons, whether these maladies arise from excrescences, caruncles, contractions of the *fibres* of the *urethra*, callosities proceeding from venereal causes, callous ulcers of the *lacunæ* of the *urethra*, or affections of the *prostate* gland, or the rest of the mucous glands of the *urethra*. But it is a matter of no very great consequence, what the exact nature of the disease may be, seeing the cure depends entirely upon the removal of the obstruction; and it is probable from observing, that as other parts of the body are liable to these several appearances, this part may be so too; and though it has been asserted by many, that there is no such disease as a fungous excrescence in the *urethra* of males, owing to the difficulty of discovering such appearances after death, yet from the analogy there is subsisting betwixt the natural structure of the internal part of the *urethra* of males and females, I am inclined to think, the existence of this fungous appearance in them can hardly be doubted; and that a very trifling  
disease



disease of this kind is capable of producing the most excruciating pains, may be concluded from the history of the following case; the cure of which immediately depended upon the removal of a fungus of so inconsiderable a size and appearance, as would not have been regarded in many other parts of the body. But as the same operation cannot be undertaken in males with an equal probability of success from the difficulty of knowing the exact situation and nature of the disease, as well as from the different length of the *urethra* itself; we are obliged to have recourse to such methods as operate more slowly, and not with so great a degree of certainty.

*E. C.* a virgin aged 27, had been afflicted, (as I was informed by herself, and her mother,) with a disease in the urinary parts, ever since she was four years old. The symptoms under which she had laboured from the beginning, were frequent inclinations to make water, which she voided by drops, and with excessive pain.

The young woman had never been free from these complaints ever since her first attack; but she was particularly ill at the

times of having her menses. These discharges were in general regular, both as to time and quantity; when it happened otherwise, her complaints were greatly encreased; especially at the very time when she expected a return of the menses. The pain and irritations had been frequently so great as to occasion convulsions; and she had been always incapable of getting her livelihood at service.

SHE had tried various methods for her relief; without receiving much benefit.

IN *January* 1754, I was desired to attend her.

UPON enquiry, I learnt that her complaints had originated in the *urethra*, and neighbouring parts. I carefully examined into the *meatus urinarius*, by introducing a female catheter, with which I opened the passage by inclining the instrument to one side: by these means, with some difficulty I discovered two excrescences arising opposite to each other from the internal part of the *urethra*, near its hither extremity.

EACH of these excrescences was near as broad as a silver penny, and in their situation and form they resembled the valves of a vein.

THEIR

THEIR colour was red; their texture spongy, and they consisted of a number of fibres; as appeared upon examination after their removal.

UPON discovering their situation and extent, I proceeded to extirpate them; which I effected in the following manner.

THE patient being laid upon her back, and her knees bent and raised, I divided the *urethra* a little way obliquely upwards on its left side with a pair of scissars: then I proceeded to snip off the excrescences at their roots; to do which, the previous and necessary incision into a part of the *urethra* afforded me sufficient room.

THE operation was expeditious, but painful. There was very little discharge of blood at first. In a few hours after the operation the wound bled profusely; but at length the *hæmorrhage* stopped of itself.

FROM this time she had no other inconvenience or pain in the part than what arose from the acrimony of the urine. This gradually abated till the healing of the wound; which was effected in about ten days after the operation.

THE only applications made use of to the parts, were fomentations of warm water and milk, and afterwards a dossil of lint spread over with cooling ointment, and repeated twice or thrice a day.

I HAD the curiosity to call upon the young woman about five months after her cure. She informed me that she had continued perfectly well without the least return of her complaint: and that her monthly discharges had been regular ever since I left her, without producing any of her former symptoms.

## C A S E LVI.

*A remarkable Instance of a Wound, by which the Tibia was entirely divided.*

ON the 9th of October 1749, J. L. aged 44, received two remarkable wounds from his antagonist, who struck him with a hedging-bill. The one upon the upper part of his left leg, immediately beneath the insertion of the tendon of the *patella*; by which the *tibia* was entirely divided, without any remarkable contusion of the integuments, or neighbouring muscles; the other on the  
left



left side of the head, which divided the parietal bone quite to its *diploe*: and he lost a considerable quantity of blood before any assistance could be procured him.

THREE days after the accident, he was admitted into the Hospital and put under my care. His complaints were a giddiness, fever, and costiveness; for which he was let blood, and stools were procured by a clyster; from this treatment he was considerably relieved. The following day his giddiness had quite left him, and his wound had a favourable aspect: which continued to go well on till the 21st instant: when the discharge was considerably increased, appeared oily, and smelt very foetid. He had rested but little the preceding night, and complained of great lowness and oppression. Upon pressing the ham, a large quantity of matter was discharged; and upon introducing the probe, both bones were found bare. From this time the discharge continued to increase till the 26th; for which reason I made a counter opening, in order to procure a more depending orifice for the evacuation of the matter. On the 27th, he was attacked with a looseness;

ness, attended with a fever, and restlessness; which several symptoms continued till the 4th of *November* following; when his strength became greatly impaired: his appetite quite lost; and colliquative sweats coming on, it was judged adviseable to amputate the limb; This was done above the knee, and the patient recovered; all his bad symptoms disappearing from the day of the operation.

UPON examining into the condition of the leg, the *tibia* and *fibula* were found carious for a considerable length.

THE wounded *cranium* became granulated, and was quite healed in a few weeks; without any exfoliation or difficulty attending its management.

#### R E M A R K.

THE looseness, fever, &c. which came on so many days after the accident, could not be attributed to the pain and loss of blood arising from the recent wounds, as the patient had been quite easy and well for several days together; nor could they arise from any impropriety in his diet, &c. since he had been kept in the most abstemious and quiet manner,

manner, from the time of his admission into the Hospital; but these symptoms may reasonably be accounted for from the fœtid matter being absorbed into the blood, and falling upon the tender *viscera*; and it is most likely this was the case, seeing the several bad symptoms of looseness, fever, and lowness, immediately disappeared upon the removal of the part affected.

*Query.* Is it not probable, from the circumstances I have mentioned, that if the operation had been deferred, the patient must have sunk under the discharge, or have died from a reflux of the matter into the mass of blood?

IF these arguments are of any weight (which seem to be supported by many instances given us by authors of undoubted authority) the operation was beyond dispute adviseable: and must in general be so, where compound fractures, wounds, or abscesses of the joints, are attended with the like symptoms. For though there may be a few instances of the recovery of people, who have been nearly under the same circumstances, yet I think they

they are by no means sufficiently numerous to induce the surgeon to trust to any other method of preserving life, than by having recourse to the operation; to which the patients generally submit with great resolution, in expectation of a recovery.

## C A S E LVII.

*A singular Instance of a diseased Joint requiring Amputation.*

IN the year 1744, T. C. accidentally injured one of his knees by a fall; the part appeared swelled, and continued painful for some months; but at length, by proper managements, it grew quite well; and so it continued for three years afterwards; when the symptoms returned with violence, and increased for three months; notwithstanding the assistance given him by a neighbouring surgeon; who, besides the use of fomentations, and other various applications to the part affected, made an issue by incision just below, and on the outside of the diseased knee: the issue was kept open for six weeks, and then dried up. About a month after the issue was healed, a distinct  
tumour



tumour appeared immediately below the outside of the *patella*; the tumour bursted of itself; but discharged very little. However, the patient grew considerably worse from this time; his appetite became bad, and his leg and thigh began to waste. Under these circumstances, he was admitted into the Hospital. But notwithstanding the several methods used for his relief, the disease increased to so great a degree, as to render the amputation of the limb necessary; which was done above knee, and the patient recovered.

## REMARK.

UPON opening the joint, the integuments were found greatly diseased, the ligaments appeared considerably thickened, the extremities of the *os femoris* and *tibia* were much enlarged, and their *cartilages* eroded.

BESIDES these *phænomena* so common to diseased joints requiring amputation, it had one thing peculiar to itself, which was, that it contained five peas that were deposited and confined within the *capsula*, or *bursal* ligament of the knee. I examined whether I could discover the opening made by the peas through

through the ligament, but could not. It is to be observed, that the issue had been healed up for near three months before the amputation.

## C A S E LVIII.

*Two singular Cases of diseased Knee-Joints successfully treated, the first by Topical Applications, the second by Operation. Communicated to the Royal Society, and published in their Transactions for the Year 1756.*

**D**ISEASES of the larger joints of the extremities have always been looked upon by Surgeons of the greatest eminence in their profession, to be attended with considerable danger to the patient, and with the greatest reason; since they have been convinced from much experience, that these maladies are too often the consequences of depraved habits of body arising from a scrophulous, scorbutical, or some other general cause. But though we are sufficiently apprised of these facts, and that these swellings do often baffle the greatest skill in Physic and Surgery, we are nevertheless not to infer  
from

from hence that every disorder of this kind is attended with the like bad circumstances ; since it is certain, that diseases of the joints, particularly those of the knee, are sometimes merely local complaints, which may not only be relieved by Surgery ; but perfectly cured. The species of tumours I now hint at are such as are distinguished from other tumours of this part by the name of *Hydrops Articuli* : of which there are two different kinds. The first, where the disease is situated in the *membrana adiposa*, and neighbouring parts on this side the capsular ligament of the joint. The second where the fluid is contained within the capsular ligament of the joint, betwixt the lower extremity of the thigh-bone, and upper extremity of the largest bone of the leg, called *tibia*. The first species of tumour may be distinguished from the second species by the touch : by the appearance of the tumour of the first kind being very pale and uniform ; by a want of fluctuation ; and by the very slight degree of pain attending the part. The repeated use of cataplasms, fomentations, mercurial frictions and purges have been sometimes known to remove this disorder. At other times it has been found,

when

when these applications have had little or no effect, that the disease has been totally removed by the application of perpetual blisters or caustics to the part affected; the blisters should in most cases be continued for several weeks. In some instances I have known the application of the *petroleum barbadense* (*Barbadoes tar*) have so good an effect, by being applied every day to the joint, even after several other remedies had been unsuccessfully tried, as to cure such a disorder of the knee-joint as had hitherto been judged dangerous; in which case there was an enlargement of the bones, as well as a very considerable one of the integuments, and of the tendinous and ligamentous parts; but without any visible degree of inflammation. In these instances no extravasated fluid could be discovered; however, there was an immobility of the joint: a considerable contraction of the hamstrings: the complaint was great, and the patients described the pain as shooting through the ligaments of the joints, through the *patella*, and through the lower extremities of the *os femoris*, and upper end of the *tibia*. They were afflicted with symptomatic fevers, which had been of many weeks continuance; and the



the patient was at length become greatly emaciated thereby. The reason for my giving so particular a relation of the circumstances attending this fact, proceeds from the desire I have of recommending a trial of the same remedy in the like cases; which, as far as I can judge from my own experience, may always be safely done, where there is no inflammation already formed upon the integuments; and I am farther induced to communicate a short history of this case, as it is an application I never saw made use of under the like circumstances; though (it must be acknowledged) the use of it has not been very uncommon in old sprains of the joints: in which cases the *Barbadoes* tar has frequently been tried with success.

THE second species of *hydrops articuli* (where the extravasated fluid is contained within the capsular ligament of the joint) may be distinguished from the first kind of dropsy of this part, by its deep situation; by the fluctuation which is discoverable upon patting the knee on one side, whilst the other hand is placed immoveably on the opposite side; by the degree of pain arising from the distention which the capsular ligament suffers

fers in consequence of its contents; by the incapacity of bending the joint, and by the circumstance of its being attended with no general complaints of body, as well as from the sudden enlargement of the tumour: upon the increase of which principally depends, I believe, the degree of uneasiness in the part. This is very far from being the case in that kind of disease called *spina ventosa*, which arises originally from a disease of the *medulla*, and vessels of the bone itself: from whence proceed grievous pricking pains that come on previously in general to any visible enlargement of the part affected, or any discoverable quantity of fluid deposited in the joint: which symptoms are very different from those arising from the second kind of *hydrops articuli*, as may be learned from the succeeding case; in which it was judged necessary to cut more than once through the capsular ligament to evacuate its contents: which operation (contrary to the commonly received opinion of wounds of the ligaments being attended with certain destruction of the limb) should always be done under the like pressing circumstances, in reasonable expectation of removing a complaint that totally disables the patient, and too frequently terminates in the loss of the

the limb when neglected; and I am more particularly inclined to recommend this practice, as I am convinced that the disease is out of the reach of such applications as are of service in disorders of these parts whose situations are more superficial; that is, on the outside of the capsular, or burfal ligament of the joint.

*W. D.* aged 29 (by business a porter) was put under my care on the fifth of *September* 1754, for a disorder in one of his knees; upon enquiry, the part appeared greatly swelled; it was attended with excessive pain; which was continual; the tumour had not the least degree of inflammation. The disorder arose without any accountable cause, and had been only of three weeks standing: Upon placing one hand on the outside of the knee, and by pressing with the other hand on the inside of the knee, it was an easy matter to discover a fluctuation; for this reason I judged it adviseable to make an opening into the tumour: which I did by incision on the upper and inside of the knee-pan, as this was the most prominent part of the swelling. Through the wound a thick gelatinous fluid,

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deeply

deeply tinged with blood, was discharged in a full stream to the quantity of fourteen ounces.

AFTER the whole of the fluid was evacuated, I introduced a probe through the incision, which I readily passed under the *patella*: the wound was superficially dressed with lint, and the whole of the knee was covered with a poultice of strong beer grounds and oatmeal. The patient complained of considerable pain for about four hours after the operation; at the end of that time he grew easy, and so continued till the second day after the operation: when the knee became a good deal painful; there was as yet very little digestion: upon enquiry, I learnt he had not been at stool for three days; which occasioned the administering a clyster: by the clyster stools were procured, and the pain of the knee became much less. The third day after the operation there appeared a considerable discharge from the wound, and the knee was quite easy; the patient continued in this state till the sixth day after the operation; when the quantity of matter was much lessened: the pain then returned, and lasted till the eighth day; on the eighth day, the discharge increased, and



and the pain remitted. From this period I observed the discharge continued to encrease until the eleventh day : which proceeding altogether from within the joint, I dilated the wound, that the matter might have a more ready issue ; this operation answered my expectation ; the patient was easy until the fifteenth day ; when he complained of a return of the pain. Upon enquiry I perceived that the outside of the knee was swelled, and by the touch I discovered a fluctuation under that part ; these symptoms induced me to make a counter-opening through the integuments and capsular ligaments into the tumour : which I found by the use of the probe to have a communication with the wound on the inside of the knee ; from this time, the patient went very well on without any farther complaints ; in about ten weeks after the first operation he was perfectly well, and still continues so without any other complaint than that of a very small degree of stiffness in the joint, as I have very lately had an opportunity of informing myself. During his confinement I made use of emollient fomentations, dressed the wounds superficially, and continued the poultice of strong beer grounds and oatmeal.

*N. B.* THE patient took a great quantity of bark on account of the discharge, which for some part of the time was very great, as well as on account of the pain and symptomatic fever.

## R E M A R K .

THE history I have given of the preceding remarkable case, with the operation I have taken upon me to recommend in the like instances, is not with a design of advising an opening to be inconsiderately made through the capsular ligament of the joint of the knee in all collections of fluids in this part; nor would I have it supposed that I think this operation is ever quite void of danger: the propriety and necessity of such an operation depend entirely upon circumstances; I would therefore have it remembered, that I recommend it only to be done where the extravasated fluid appears very great in quantity: where the limb is rendered almost useless by the disease: and is attended with considerable pain without any remarkable enlargement and disfigurement of the bones themselves: which is a circumstance though rarely known to occur, yet most certainly does sometimes happen.

happen. In those cases of collections of matter in the knee-joints (abscesses) which very frequently happen, and are attended with the circumstances of enlarged disfigured bones; and a wasting away of the limb, joined with a bad habit of body, I am of opinion, an opening into the joint by caustic, on incision, or otherwise, should never be put in practice; because, I have frequently known this method recommended and pursued with the distant hopes of saving the limb, and cannot recollect one instance where the practice has been successful; on the contrary this attempt to relieve has been followed with very painful and dreadful consequences; but where the disease is differently circumstanced; that is, not joined with a visible affection of the bones, and a bad habit of body, and which through neglect or otherwise has arrived to the state of *W. D's* case, an opening through the capsular ligament is undoubtedly advisable in expectation of saving the limb: the possibility of which may be learned from what has already been said: and without which operation I believe no relief could have been given to the patient but by a more severe operation; to wit, the amputation of the limb.

## CASE LIX.

*Of a fractured Patella.*

*A.* B. aged 25, in *August* 1747, broke her knee-pan transversly by a fall down stairs: for which she put herself under my care. The extremities of the divided bone were at a considerable distance from each other: but by extending the leg, and gently pressing the extensor muscles; and tendons of the *tibia* above the fractured part, I brought them to within an inch of each other, and they were retained in this situation by a proper compress and bandage: in a few days after their reduction, I gently moved the knee, by carefully bending and extending it, which was repeated every day during her cure. At the end of six weeks she appeared so well recovered as to be able to walk upon plain ground; or up and down stairs with little inconvenience. She could bend and extend her knee very well; the parts of the fractured bone remaining at the same distance from each other, in which they were at first placed. I observed during my care of her, that she had formerly fractured her other knee-pan



pan in the same manner, and that the parts of the fractured bone were then at least three inches distant from each other. She informed me, that she had never applied to any one for assistance in this case; and that during the whole time she had been capable of walking about, but was lame for three months after the accident. Since that time she has enjoyed the free use of her leg, and has been capable of walking upon plain ground, or up and down stairs without pain or difficulty.

# CASE LX.

## *Of a fractured Patella.*

**S.** P. 43 years of age, broke her knee-pan in *October* 1748, by a fall down stairs, for which accident she was recommended to my care; upon enquiry, the whole knee appeared greatly contused, attended with a considerable ecchymosis and tumour, which could not be dispersed for near three months. Upon the removal of these complaints, the extremities of the fractured bone were discovered to be near two inches from each other; her knee appearing at the same time stiff and in-

inflexible, in which state it remained for some time afterwards ; but by the use of fomentations, relaxing ointments, and daily pains being taken in bending the joint ; it at length became flexible, and she was capable of walking upon plain ground without any lameness or inconveniency ; but the going up and down stairs was attended with some difficulty.

## R E M A R K.

THE method recommended above, in the treatment of transverse fractures of the *patella*, is very different from the general rule laid down by writers to be observed in the like cases. Their advice being to bring the extremities of the bones, if possible, into contact with each other, and to keep the leg immoveably extended for eight or ten weeks ; but since it is found by experience, that in consequence of such management, the joint becomes stiff and inflexible, from, probably, the *callus* of the broken bone and synovia of the joint mixing together, and soldering up the joint, there is no doubt of the great impropriety attending this method of treatment ; and for these reasons it is now a custom with some of the most eminent in the profession,

to

to treat these accidents in the manner I have prescribed, preferable to that which has been advised by many authors : by which means the motion of the part is still preserved.

N. B. THE same rule should be observed in the treatment of transverse fractures of the *processus olecranon* of the *ulna*, regarding the frequent extension and flexion of the elbow-joint : for want of which method I have known accidents of this kind followed by an incurable stiffness of the part, to the great dissatisfaction and injury of the patient.

## C A S E LXI.

*Of a division of the Tendo Achillis.*

WHEN a tendon is in part divided by a sharp instrument, or wholly broken through, in consequence of jumping, dancing, or any other extraordinary violence ; it is agreed, that the bringing the divided extremities into contact with each other, and by keeping them so for a certain time by the help of compress and bandage, are generally sufficient to compleat a re-union ; or at least

an adhesion of these parts to the neighbouring ones, without any farther operation. It is nevertheless advised by writers, who approve of this method under the like circumstances, to make use of the needle and ligature, when the tendon, together with its integuments, becomes totally divided by a sharp instrument.

FROM the several instances of divided tendons, which have come under my cognizance, and which have been so treated; I have observed that the parts always suffer considerable pain and inflammation from being stitched, and generally terminate in abscesses of the neighbouring integuments, and sloughs of the extremities of the tendon, or tendons, through which the needle and ligature have been passed; by which means the cure is considerably retarded, and extraordinary pain incurred. So that from these observations, and from many others, I am induced to recommend a total disuse of the needle and ligature in the like cases, and to trust to a favourable position of the limb, assisted by proper compress and bandage. Again, the needle and ligature should not only be rejected in  
divi-



divisions of the tendons, but in all other recent wounds, where compress and bandage can be applied to advantage.

*A. B.* had the misfortune of dividing the *Tendo Achillis*, about two inches above the *Os Calcis* by the slipping of an ax, with which he was at work. He was put under my care. Upon inspection I observed the upper part of the tendon to be at a considerable distance from the lower, in consequence of the contraction of the *Gastrocnemii muscles*. I made use of no other method in bringing the extremities together, than bending the knee, extending the foot, and gently compressing the leg downwards from the calf; which being done, I applied a bandage from the ham quite to the upper edge of the wound. At the same time, observing to keep the foot extended: which was secured in this position by the help of a piece of paste-board properly adapted to the foot, and retained on by a second bandage. The parts were kept in this posture for five weeks: at the end of which time the wound was healed, and the extremities of the tendon appeared perfectly reunited: or at least they adhered to their neighbouring

bouring parts. The ankle became stiff from being constantly kept in this position: but by the use of fomentations, and an embrocation of neats-foot oil, it soon became pliant, and perfectly useful. To these I could add several other cases of the like kind, did I think them at all necessary to confirm this practice.

## C A S E LXII.

*Of a Division of the Flexor Tendons of the Wrist.*

A. B. accidentally pushed his hand through a pane of glass, which cut his wrist on the fore part, quite a-cross. The upper cubital artery was divided, and bled profusely; but the bleeding was stopt without much difficulty by the needle and ligature. The tendons of the flexor *Carpi Radialis*, *Palmaris longus*, and flexor *Carpi Ulnaris Muscles*, were likewise divided, and their upper extremities were drawn at a considerable distance from the lower ones; the flexor tendons of the fingers were in part divided; however, upon bending the hand, and pressing the arm downwards, the parts were brought together, and kept in that situation till cured; which was  
in

in twenty-five days after the accident. Upon healing the wound, the parts appeared stiff, and somewhat uneven : but by the help of fomentations, relaxing oils, and gentle extension frequently made use of, they perfectly recovered their free motion, usual strength, and evenness.

I SHOULD not have thought these cases worthy of communication, had not they been merely intended as an illustration of the advantages of this practice, preferable to the other method : I mean that of passing a needle and ligature through the ends of the divided tendons..

IT is worth observing, that the inflammation which succeeded upon this method of treatment was no more than what always happens to other parts in incised wounds of equal depth and size ; and that there were neither abscesses nor sloughs in consequence of the accident, or management of the divided tendons.

### CASE LXIII.

*Of a Rupture of the Tendo Achillis.*

*A.* B. had the misfortune by jumping to break the *Tendo Achillis* in two. The patient being ignorant of the injury he had suf-

sustained, had not proper assistance given him till a week after the accident : when he was recommended to my care. Upon examination, I found the *Tendo Achillis* entirely separated ; the extremities of the divided parts were at least an inch and a half distant from each other, and the patient complained of considerable pain ; this being the case I proceeded to the reduction of the divided parts ; which by extending the foot ; by bending the knee, and by forcibly compressing the muscles downwards, was with difficulty effected : This being done, I placed a compress upon the leg, extending from the ham down to the upper edge of the divided tendon : and upon this applied a roller, with a degree of tightness sufficient to prevent the contraction of the *Gastrocnemii* muscles : when this was done, I placed a linen compress upon the upper part of the foot, and upon that, a piece of paste-board ; which were secured on by bandage, and the whole leg was tied up in a pillow. He became easy soon after the reduction of the tendon, and so continued till he left me : which was in about five weeks ; during this time, the compress and bandages were renewed as occasion



caſion required. The extremities of the tendons remained together, but he continued lame, and was weak in the part for ſome time, till at length he recovered the uſe and ſtrength of the limb. I did not obſerve that there was any waſting of either of theſe limbs, which is no uncommon ſymptom, after accidents of the like kind.

## R E M A R K.

IF it ſhould be inſiſted upon that the needle and ligature are ſtill adviſeable in tendons that are divided by a ſharp inſtrument, they cannot but be equally ſo in tendons that are divided by being ruptured where there is no injury done to the integuments; but I fancy it will be allowed upon conſideration, that a divided tendon is as likely to do well, as a ruptured one; ſince the parts may always in recent caſes be brought together with equal eaſe, and kept ſo by a proper ſituation of the part, aſſiſted with comprels and bandage.

## C A S E LXIV.

*Monsieur Faget's Remarks on the Use, &c. of the Styptic purchased by his Most Christian Majesty; communicated by James Theobald, Esq: F. R. S. inserted in the Philosophical Transactions for the Year 1753.*

**D**Ecember 7, 1752, about the end of the year 1750. Mr. *Brossard*, a Surgeon from *Berry*, came to *Paris*, to propose the use of a remedy, which he had discovered for stopping the blood after amputations, and which he asserted, to have found effectual in several amputations of the arms and legs.

AT his request, some gentlemen of the Academy of Surgery were deputed, in whose presence he was to make some new experiments in stopping the blood upon different animals, and in all which he succeeded, by stopping it in the largest arteries after amputation. But the success of this remedy might yet be considered a little dubious, because many animals, as in dogs particularly, the great arteries stop of their own accord; and rarely any dog dies from an hæmorrhage,  
because

because their blood is more disposed to congeal, and by that means to stop the discharge.

FOR this reason, the experiments made on animals not being thought satisfactory, and yet being convinced, that no ill effect could follow the application of this remedy on the human species, Mr. *Broffard* was permitted to use it at the Hospital of the invalids, in an amputation of the leg which succeeded perfectly well; and not the least ill accident happened through the whole time of the cure.

SOMETIME after this, two waggoners were run over by a waggon loaded with stone, and each of them had one leg broken in a miserable manner. These two men being brought to the Hospital of the charity, I saw no other hopes of success, but in amputating the legs; and, for that reason, I requested Mr. *Broffard* would be present, and give me a proof of this new application, which we applied in the following manner.

As soon as the leg was cut off, I slackened the tourniquet to discover the vessels, and Mr. *Broffard* applied upon the orifices of the two arteries, two pieces of his astrin-

gent, fastened one upon another with a ribband, in the manner which I have sent to you, and as it is in the drawing. After the application was made, I streightened the tourniquet, and passed the two ends of the ribband, which was fastened to the upper piece of the astringent, upon the stump, over the knee, and applied a linen bag, filled slightly with the same astringent in powder, upon the whole wound; and, over all, applied the common dressings in the like case. After the dressing was finished, I slackened the tourniquet, and two hours after, took it entirely away. Eight and forty hours after this we took off the dressings, and not the least drop of blood followed from the vessels; and we again applied one single piece of the astringent upon the two vessels; and I dressed the other parts of the wound with pledgets of lint, with common digestive, a styrax plaister, and the usual bandage.

THE third day the astringent fell off of itself, in the time of dressing; and the patient, after that time was dressed in the common manner. The same was done to the other patient, after the amputation, as to this.



THE first of these men died on the fifth day, and the other on the ninth; but there did not appear through the whole, the least tendency to an *hæmorrhage*. Thus the remedy fairly produced its effect, as to the stopping of the blood.

HOWEVER, in order to determine the manner, in which this astringent produces its effects, I examined the blood-vessels of those two patients after their death, and I found them contracted and straitened, as if they had been tied, and, in the largest of them a conic coagulation of the blood, which was an inch and half long; and after having taken out this coagulation, it was with difficulty, that I could introduce the point of a very small probe into the orifice of that vessel.

THE patient who died on the ninth day, had the arteries contracted in the same manner; but with this difference, that the congelation was at least four inches long.

MR. *Morand* has employed this remedy with success, in applying it to a wound made by a sword in the bending of the arm; and, I myself have made use of it, with great success on occasions where the temporal, and intercostal arteries have been opened.

IN the last mentioned cases, I applied but one piece of the styptic upon the opening of the artery ; and this generally falls off at the first dressing, that is, forty-eight hours after the application, without the least appearance of an *Hæmorrhage*, or other ill symptoms which can raise any objections to this styptic ; for those patients are all recovered.

THERE have been lately made at the hospital of the invalids two experiments of this astringent in amputations ; and in both, the success has been equal to all that can be desired. The surgeon, in these cases, used only the two pieces applied one upon the other, without using the powder in the bag, as before ; and dressed the whole wound with lint, and the common bandage.

THUS, then at last, there appears to be discovered a remedy beyond our hopes, and which art has never yet equalled. The application of fire was the cruel resource of the ancients ; and *Paré* believed himself inspired, when he discovered the use of the ligature. But, alas ! how many accidents are there, which arise from the use of those two manners, and which too often terminate in the death of the patient ! Happy for us,  
that

that those accidents now appear to be no longer to be feared by the lucky discovery of this styptic, the first experiments of which have so greatly promised success !

It may be remarked, that, if this astringent succeeded only in coagulating the blood, it has produced nothing extraordinary, for these coagulations would not have been sufficient to have stopped the *Hæmorrhage*, directly after the operation in amputations ; but its excellency lies in contracting the arteries so closely, that it hardly lets a little probe into the aperture of the artery, and by this means, forms as it were a perfect ligature, much more certain than the usual one, as this is not made in any one point of the cylinder of a vessel. Thus this application exceeds every thing which has hitherto been produced by the operation of our hands.

THIS singularity in the operation of this remedy, supposes another in the vessels, which is the great contractility of the fibres of the arteries. These, indeed, do naturally contract of themselves, but not to two thirds of their diameter ; nor to that state in which they are straitened by the effect of this astringent ; because by that, the whole aperture is al-

most intirely taken off in the largest vessels, and it is easy to imagine their effects in the smallest.

It may be observed, that it is not in the dead parts of bodies that this contraction can be made ; it requires the assistance of the vital principal, and operates on the fibres by certain articles contained in it, which dispose the animal body, by its irritation to shorten its fibres, and reduce the tissue which they compose in a lesser volume.

THIS remedy, of which I have been speaking, is nothing else but the agaric of the oak. The best kind of it is found on the parts of oak-trees where the large limbs have been cut off, and it very often resembles a horse-shoe in its shape. This agaric is distinguished into four parts, the rind ; the second part, which is preferable to the other ; the third part serves for the stopping the blood in smaller vessels, as well as that part which touches the tree ; this last was what was powdered, and applied in the little bag, as in the operations of the charity.

THE second part is what I make use of in amputations, which is cut into pieces of the size of that which I have sent you. It must  
be



be beaten by a hammer till it is soft, and this is its whole preparation. Every part is prepared alike.

THE best time of collecting it Mr. *Brossard* has found to be in the *Autumn*, in fine weather, after great heats.

THIS, then, Sir, is all I can collect of the use, application, and preparation of this new remedy for stopping blood. If the *Royal Society* shall find any thing in it worthy their regard, I shall think myself happy in having communicated these observations.

AT the time of reading the above memoir, some bits of agaric were exhibited to the *Royal Society*, part of which was delivered to me to make trial with, upon the next opportunity, which I did in a few days after with success; and presented the following account of its effects to the *Royal Society*, which was read by one of the secretaries.

*December the 14th, 1752, Thursday, Hatton-Garden.*

AGREEABLY to the desire of this *Society* I have taken the first opportunity of communicating the effects of the agaric of the  
oak

oak in stopping of *Hæmorrhages*, or bleeding from the principal vessels aft eamputation. If I have been too circumstantial in my narrative of the symptoms and circumstances attending the following case ; I hope you will attribute it merely to the desire I have of giving you all the satisfaction I am capable of, relating to the experiment made with the styptic ; and this I have been more particularly induced to, as it is the first case of the kind offered to your consideration, where this application has been made use of in *England*.

## C A S E LXV.

*Of an Amputation of the Leg.*

*S*aturday, December the 9th, 1752, C. S.  
 aged 24, had her leg amputated below the knee, at twelve o'clock at noon on account of an incurable ulcer with which she had been afflicted for 13 years. She lost very little blood in the operation. Immediately after the amputation, a piece of agarie of a proper size (the same which was delivered to me by the *Royal Society* for this purpose)

purpose) was applied to the mouths of the principal arteries. Two other small pieces of agaric were applied to the mouths of two smaller arteries, which appeared at some distance from the principal ones. Upon the pieces of agaric, dossils of lint were applied, and over all, a pledgit of tow spread with yellow basilicon, which were kept on by the common bandages made use of in such cases, and applied with the usual degree of tightness.

For about an hour and quarter after the operation, the tourniquet was kept on moderately tight at a convenient distance above the knee, at the end of which time, it was slackened so as to have no degree of pressure upon the femoral artery. The patient was much easier than I had ever observed after the use of the needle and ligatures. Her pulse appeared very little disturbed, till about four o'clock this afternoon, when the symptomatic fever began to come slightly on, attended now and then with convulsive twitchings of the stump and thigh; for which reasons the tourniquet was somewhat tightened. At seven o'clock this evening the tourniquet was quite let loose; soon after which, the  
con-

convulsive twitchings became less frequent, and less severe; these spasms of the limb she had been long used to have, and by her own account, they had been more severe before the operation than since.

SHE had but little rest this evening; *Sunday* morning she appeared as well as could be expected, her pulse was calm, and she had no particular complaints. At twelve o'clock at night she fell asleep, and so continued till seven o'clock the next morning.

*Monday* morning she appeared well, her pulse was calm, and she had no particular pain. *Monday* night she slept but little, but was very easy the whole time; *Tuesday* morning she appeared very well, and her pulse quiet; this morning she was dressed in the usual manner, her wound appeared with a very good aspect. She has suffered no pain in the part where the agaric was applied, and is in all respects as well as can be expected. At seven o'clock this evening I visited her; she was perfectly easy, the convulsive twitchings of which she at first complained, are quite removed.

*Thursday December 14*, she continues well; her wound was dressed again this morning,  
from



from which there appeared a very proper discharge of matter, not in the least tinged with blood. The whole of the agaric with the rest of the dressings were removed without giving pain. Upon the removal of the agaric, I enquired narrowly, whether I could discover the extremities of the arteries, or their pulsation, but there was not the least appearance of either of them; from this time she continued to mend without the least interruption, till she was dismissed the Hospital.

*A short History of the Effects of the Agaric of the Oak in stopping of Bleedings, after some of the most capital Operations in Surgery; with an Account of the Manner of its acting upon the Vessels. Communicated to the Royal Society.*

IN December 1752, I had the honour of communicating to the *Royal Society* the good effects of the agaric of the oak in the case of a young woman aged 24, whose leg I had cut off below the knee. Since that time, I have not heard of any farther trials which have been made with it, or  
of

of any accounts that have been given to the *Society* of its great usefulness in Surgery. This may probably arise from the virtues of the agaric not being as yet much known in *England*, or from the unwillingness of Surgeons to adopt such a method as they may probably suppose to be attended with hazard. The great success which attended my first experiment of this kind, was a sufficient inducement to me to make a farther trial of it in other cases of the like nature. This I have lately done in four more instances; all of which have been attended with success equal to the first. The particular advantage of the agaric is evidently this, that it has generally the power of effectually restraining the bleeding without giving pain; for which reason there appears to be much less of the symptomatic fever than what occurs after the use of the needle and ligature; which is, by much, the most painful process of the operation in amputation, and is sometimes productive of convulsions, as has been observed by Monsieur *Le Dran* in his Chapter of *Amputations*, under which circumstances he particularly advises the cutting the ligatures, &c. The ligatures have  
some-

sometimes the farther inconvenience of remaining quite fixed to the last, on which account they unavoidably retard the healing of the wound.

BESIDES the effect of restraining the *Hæmorrhage* in all recent wounds, which the agaric has very often in common with the ligature, it has one great advantage peculiar to itself, which is that of restraining the bleeding in wounds of several days or weeks standing, where the parts are become so rotten as to be incapable of bearing the ligature. This I have known to have been the effect of it in several instances where the ligature has been attempted in vain. The manner in which the agaric acts, is by contracting, or purfing up the extremities of the divided vessels. I had an opportunity of enquiring into this fact in a patient whose leg was cut off below the knee. Immediately after the amputation, pieces of agaric were applied to, and properly secured upon the mouths of all the principal vessels. In about an hour after the operation the stump bled a-fresh; on which account I removed all the dressings, except those pieces of agaric that were at  
first

first applied. This gave me an opportunity of discovering the source of the *Hæmorrhage*, which was from a collateral vessel at least an inch distant from the principal ones. When I had secured the vessel, I had the curiosity to remove the bits of agaric from those very parts to which they were at first applied. I observed the mouths of the vessels to be totally contracted in so short a space of time, and to be capable of resisting the whole force of the circulation; the extremities of the vessels being altered from their natural shape of a cylinder, to that of a cone. After having said thus much in favour of the agaric, I shall conclude with a reference to the following cases, as some confirmation of what has been above advanced.

## C A S E   L X V I.

*Of an Amputation of the Leg.*

C A S E   t h e   1<sup>st</sup>.

*M*AR 1754, J. L. aged 51, had been long afflicted with an ulcer in his leg, which at length became so general (occasioned by



by an impoverishment of the whole mass of blood, and a constant flow fever with which he had been for some time afflicted) as to destroy the greatest part of the tendons and muscles from the calf of the leg down to the ancles. The discharge from the wound had been for some weeks so excessive, as to reduce him to the greatest extremity; and the whole substances of the *Tibia* and *fibula* appeared quite rotten for a considerable length.

IN consideration of the foregoing symptoms, it was recommended to him to part with the limb (though at the same time the success of the operation was judged to be very precarious, on account of his great weakness, and bad habit of body) which he readily assented to, and I performed the operation in the following manner.

THE patient being seated upon a table of a convenient height, and properly secured by assistants, a linen compress about two inches broad was applied round the thigh a little above the knee. Upon this the screw tourniquet was fixed, with a degree of tightness sufficient to prevent the course of the blood through the femoral artery and its branches.

A a

THIS

THIS being done, I applied a piece of tape round the leg, about five inches below the knee, as a direction for the knife; then I proceeded to divide the integuments quite through, which were drawn back by an assistant, and afterwards divided the muscles as near as possible to the integuments quite to the bone. Immediately after this, I introduced the catline betwixt the *tibia* and *fibula*, with which I divided the *inter osseous* ligament, &c. and then proceeded to saw through the bones.

IMMEDIATELY after the amputation, I looked for the principal arteries, and easily discovered them without slackening the tourniquet, (which I have seldom had occasion to do in operations of this kind.) Upon the mouths of these vessels I applied small bits of agaric, about the size of a shilling, as well as upon the mouths of the smaller vessels which discovered themselves by their oozing. Upon the bits of agaric I applied soft layers of lint. All these were covered with a pledgit of tow spread with yellow basilicon, and properly secured on by the common bandage.

ABOUT

ABOUT three or four minutes after he was rolled up, and put to bed, I discovered the blood to discharge freely through the dressings, upon which I tightened the tourniquet in expectation of stopping the bleeding, but this appeared evidently to encrease it.

SEEING this uncommon effect, I quite slackened the tourniquet, upon which the bleeding immediately ceased. This I was led to from a supposition that the veins had probably suffered so great a compression from the instrument, as to be incapable of returning that blood which was carried to the neighbouring parts by the collateral arteries arising from the principal trunk above the ligature. But whether this was the true reason or not, I cannot take upon me to determine; however the fact was, that the bleeding immediately ceased, and did not return again.

THE patient was dressed on the fourth day after the operation, and the whole of the agaric was removed. Since then he has been treated in the common method without any farther use of the agaric. The patient has had very little fever or pain since, and was well in health nine weeks after the operation, but the wound was not then healed.

## CASE LXVII.

*Of an Amputation of the Breast.*

CASE the 2d.

*MAY* 1754, E. H. a very lusty woman, 38 years of age, had been afflicted for some time with a diseased breast, which at length became cancerous. The basis of the breast was much larger than common, and was complicated with a considerable schirrous knot which extended to the arm-pit.

As things were thus circumstanced, it was plain that nothing could be advised, but the amputation of the part; which she consented to after some weeks deliberation, and I performed the operation in the following manner.

THE patient being seated upon a long stool of a convenient height, and an assistant behind her, who secured her by clasping her round her waste, I seated myself in a chair opposite to her, and supporting the breast with my left hand, I began with making a semicircular incision upon its superior



rior part with a round edged knife, which was continued quite to the pectoral muscle. After this, I discovered an adhesion of a part of the basis of the breast to the pectoral muscle, from whence I separated it; then I proceeded to divide the integuments quite round on its inferior part, and finished the amputation by dissecting the inferior part of the breast from the lower part of the pectoral muscle, upon which it lay loose, and quite free from adhesion.

IN the operation, several arteries of a considerable size were divided, which were compressed by the fingers of an assistant, till the whole of the breast was removed.

AFTER cutting off the breast, I made a longitudinal incision through the integuments quite to the extent of the schirrous tumour, which afforded me sufficient room to dissect it out.

IN removing the tumour, I necessarily divided a considerable artery which nourished it.

THE wound was large, and bled freely from five or six arteries.

I MADE use of no other method to stop the bleeding than the application of pieces of

agaric to the mouths of the vessels, which were properly secured on by a flannel roller, after being first covered with common dry lint, and a pledgit of tow spread with digestive. The symptomatic fever was very slight; she has been quite free from those painful spasms which constantly arise from the use of the needle and ligature. There has not been the least loss of blood since the operation. Her wound was dressed on the fourth day, when the whole of the agaric came away. Since then it has been treated in the common method. She is very well, and her wound was at the point of being healed in nine weeks after the operation.

## C A S E LXVIII.

*Of an Amputation of a Leg.*

**M**AY 1754, G. W. aged 12 years, was admitted into the Hospital with a complaint in one of his ancles and feet, with which he had been afflicted for some time. The disease was an abscess in the joint of his ancle; and he had another abscess on the upper part of the same foot, which had discharged, and continued to discharge so much

as to waste his whole limb, to bring on an hectic fever, and to render him incapable of putting his foot to the ground without bringing on excessive pain.

HE had very little appetite; the ligaments of the ankle and foot, as well as the bones of these parts were much enlarged, and become carious.

IN consideration of these circumstances, and not being able to cure, or give him relief by any other methods, I advised the amputation of the leg, which was complied with, and I performed the operation on the 13th of *May* 1754, in the manner as before described, and in the usual place below the knee.

THE agaric and dressings were applied as in the preceding cases, which answered perfectly well in all respects.

THE tourniquet was quite removed in ten minutes after the patient was put to bed. He has had very little fever, restlessness, or pain since the operation.

HIS wound was dressed on the 5th day after the operation, and the whole of the agaric was then removed.

THE patient is very well in health, and his wound was very near being well in eight weeks after the operation.

## CASE LXIX.

*Of an Amputation of a Leg.*

**M**AY 1754, R. B. aged 54, was admitted into the Hospital with a mortification in his foot, which, notwithstanding all the means used in Physic and Surgery for his relief, continued to advance till it extended to about two inches above the joint of the ankle, where at length it stopped, after having destroyed the several tendons, ligaments, and periosteum, which belong to the neighbouring parts.

THE patient was of a very bad habit of body, his countenance was fallow, his pulse quick and languid. He was in a very weak state, and his whole mass of blood greatly impoverished. He at the same time had a mortification in the other foot, which deprived him of all his toes.

WHEN the mortification was separated, and his habit of body improved by proper medicines and time, the amputation of the limb was advised, which he consented to; and I performed the operation in the usual place  
below



below the knee, on the 21st of *May* 1754 and in the same manner as has been already described in the case of *J. L.* p. 352.

I MADE use of no other methods to stop the bleeding than the agaric, which was applied to the mouths of the vessels, as in the preceding cases.

IMMEDIATELY after the operation and dressings were finished, the patient was removed to bed, and the tourniquet taken off.

HE has not had the least loss of blood since the operation.

THE pain and fever have been very inconsiderable.

IT is now eight weeks since the operation was performed; the patient is alive, and his wounds as near being well, as the time, his age, and bad habit of body can be supposed to admit of.

#### R E M A R K.

THE case of *J. L.* has something singular in it, and particularly proves the extraordinary efficacy and usefulness of the agaric.

I HAVE already taken notice how frequently it is impracticable to make a proper use of the  
needle

needle and ligature in wounds of long standing ; and I farther know from experience, that it is no uncommon thing to meet with the same disappointments even in recent wounds that are made upon diseased parts. So that I think it may be reasonably questioned, whether I should not have met with the like difficulty in this subject, had I attempted to secure the vessels by ligatures.

## C A S E LXX.

*Of an Amputation of the Leg.*

**T**HIS operation was performed since the communication of the four preceding cases to the *Royal Society*.

July the 6th 1754, *H. R.* a young man of 24 years of age, was admitted into the Hospital on the 25th of *April* of this year on account of a disease in his left foot.

THE part was much enlarged and inflamed. He had a fever, and there was a considerable collection of matter which pointed on the upper and outer part of the foot, betwixt the extremities of the *tibia* and *fibula*.

THE

THE tumour was opened by caustic, and discharged about a quart of very foetid matter.

THERE was a second abscess formed on the inside of the leg, under the *Tendo Achillis*; which was opened by incision.

FROM the account given me by the patient, the disorder had been about sixteen months standing, and took its rise from a strained ancle, which was immediately succeeded with a considerable degree of pain and swelling. But by rest, and the application of warm vinegar to the part, these symptoms were soon removed, and he continued easy and perfectly well for a few weeks, when he had the misfortune to strain the same ancle again.

FROM the moment of the second accident, the patient became lame, his ancle and foot swelled, and his disorder increased for two months.

IN this situation he put himself under the care of an eminent Surgeon. The tumour terminated in an abscess, and was opened by incision.

THIS collection of matter was succeeded by several others, which were opened in the same manner.

THE

THE wounds were cured in about eighteen weeks, and the patient was restored to the perfect use and motion of his foot.

HE continued quite well for six months, when on a sudden, the foot became painful, and swelled again without any previous accident, and soon afterwards one of the former wounds broke out, from whence there arose a considerable *Fungus*.

IN consequence of the disease, the leg was become wasted, the patient was incapable of putting his foot to the ground, he rested very little, his appetite was bad, his pulse quick and low, the whole ankle and foot were greatly enlarged.

FROM these circumstances, and all attempts to relieve him having failed, it was judged adviseable to amputate the limb; which I did this morning in the usual place below the knee, and in the same manner as has been already described.

WHEN the leg was cut off, bits of agaric were placed upon the mouths of the several arteries, as in the preceding cases, and the same kinds of dressings and bandage applied over them; the patient was immediately removed to bed, and in a few minutes after, the tourniquet was let quite loose.

UPON



UPON slackening the tourniquet, the patient complained of a convulsion in his stump, which was succeeded by a discharge of blood through the dressings from the *Arteria Tibialis Antica*.

SEEING this, I tightened the tourniquet, upon which the bleeding ceased. I kept the tourniquet moderately tight for a quarter of an hour, and then loosened it again. The patient, upon its being loosened, complained of a return of the spasm in his stump, and there presently ensued a second discharge of blood from the same vessel. On this account, I tightened the tourniquet again, and compressed the femoral artery: upon which the bleeding immediately ceased. I kept the ligature moderately tight for about a quarter of an hour, and then loosened it till it had no degree of pressure upon the artery. From this time, the bleeding stopped, and did not return again.

UPON the whole, I judge that the quantity of blood which was lost in consequence of the operation did not amount to eight ounces; and of this I am very certain, because I had placed a basin under the stump for the reception of the blood, which amounted to  
about

about three ounces; and allowing there was the same quantity, or a little more, absorbed by the dressings and rollers, the whole could not amount to more than I have supposed; which evacuation, after an operation of this kind, is more likely to be serviceable than injurious to the patient, when he has not been much reduced by the disease.

THE patient rested very well the night after the operation; he had scarcely any symptomatic fever, and the next morning was perfectly easy.

FROM this time he continued to go on very well without the least interruption, or return of the bleeding.

THE wound was dressed on the 4th day, when the whole of the agaric was removed, and only the common digestive applied to the stump; I examined whether I could discover the extremities of the vessels, or any pulsation in the wound, but could not.

THE wound was dressed again on the 6th day; the patient remains very well; he has had hardly any fever or uneasiness; his wound is in a perfect good state.

ON the 7th and 8th days the patient was very well; his wound continued from this  
time

time to go well on till his cure, which was completed in eleven weeks.

R E M A R K.

UPON examining into the condition of the foot, after it was amputated, a great part of the capsular ligament of the ankle-joint appeared to be destroyed. The superior part of the *astragalus*, and inferior part of the *tibia* were deprived of their *cartilages*. The integuments and neighbouring tendons were greatly thickened, and adhered inseparably to each other. The *membrana adiposa* had the appearance of a *cartilage*. The *tarsal*, and *metatarsal* bones were much enlarged.

N. B. THE reason of my discontinuing the use of the agaric from *December* 1752, to *May* 1754, was owing to my not being able to procure such as I believed might be depended upon. But since I have had it in my power to procure the genuine species of agaric, I have always used it; and have never as yet met with one instance of its failure; nor have I ever been under a necessity of applying it a second time after any operation whatsoever,

except

except in that instance which has been taken notice of in the introduction to these cases.

BESIDES the particular operations of which I have already given an account, I could treat of several others wherein I have applied the agaric with equal benefit: but I look upon it as unnecessary to give a detail of its effects upon vessels of less consequence than those I have already spoken of; concluding it must necessarily be allowed, that whatever styptic is powerful enough to suppress an *hæmorrhage* from the larger vessels, must, *cæteris paribus*, be sufficiently powerful to suppress an *hæmorrhage* from the smaller, provided it can be applied and retained upon the mouths of the divided vessels with equal advantage; and it is probable, that the application of the agaric will prove not only of great use after most operations where the needle and ligature may be advantageously used, but particularly so in stopping the bleeding from those vessels which are divided in the lateral operation for the stone, as well as the bleeding from any other wounded vessels, which, from their deep situation, cannot be secured with the needle and ligatures



CASE LXXI.

*Of an Amputation above the Knee, where the Agaric was applied unsuccessfully.*

FROM the uninterrupted success which I had met with in the several preceding operations, I was encouraged to try the effects of the agaric in a vessel of a much larger size than any I had hitherto attempted: having occasion therefore, about three weeks ago, to cut off the leg of a young man aged 20, on account of a carious *tibia*, and luxation of the knee, which disease had been about 14 months standing; I applied to the *femoral* artery, and to its collateral branches, some of the same kind of agaric which I had before used in the preceding amputations, and in the same manner as is there described. After having rolled up the stump, and put the patient to bed, I continued the tourniquet and ligature upon the thigh for about 8 or 10 minutes, as tight as was necessary to restrain the flux of blood; at the end of which time, I gradually loosened the ligature until it had

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a very

a very small degree of pressure upon the *femoral* artery. After it had been let loose about two minutes I perceived the stump to bleed; this gave occasion to my tightening the ligature, which I kept so for about 10 or 12 minutes, and then gradually slackened it again; upon which the wound bled afresh. Seeing this, I repeated the stricture of the ligature; in which state I kept it about half an hour, and then gradually slackened it again. Upon slackening the ligature, I perceived the stump to bleed very freely; on which account I tightened the ligature again, and effectually restrained the *hæmorrhage*. After these several trials, I considered the agaric as incapable of having the desired effect upon so large a vessel; and being determined not to risque the life of the patient, I immediately took off the roller and dressings, and secured the *femoral* artery with the crooked needle and ligature; after which there was no return of the *hæmorrhage*, and the patient is now in a fair way of recovery.

THIS is the only instance in which I have tried the effects of the agaric in the divided *femoral* artery; if upon a second experiment of the same kind, it should be found equally

un-

unsuccessful, I shall then be induced to consider this application as useful only in amputations of the leg below the knee, and in amputations of the arm below the elbow, as well as in all other operations where vessels of a smaller size are divided: as yet I have had no opportunity of trying the agaric to the divided humeral artery; though I have been very well informed by a Surgeon who spent some time in *Paris*, that he saw an instance of a divided humeral artery where the agaric was applied with success, and the patient recovered without any future *hæmorrhage*; which piece of history will be a sufficient inducement to me to make trial of it in the like case when an opportunity shall offer; and especially as these experiments may be always made without the patient's running any risque, or incurring any encreased degree of pain.

## C A S E LXXII.

*Of an Amputation of the Leg where the Agaric succeeded: when the Needle and Ligature could not take place.*

**J**. V. a young man 15 years of age, had his leg cut off below the knee in *April* 1754, on account of a diseased ankle-joint, and rotten bones of the upper part of the foot.

IMMEDIATELY after the amputation of the limb, the Surgeon who performed the operation, proceeded to stop the bleeding arteries by tying them with the crooked needle, and ligatures.

AFTER the several vessels were properly secured, the patient's wound was carefully dressed with lint, flour, &c. and he was removed to his bed.

IN a few hours after the operation, (upon the coming on of the symptomatic fever) the stump bled so much from the collateral vessels, as made it absolutely necessary to remove all the dressings, and to have recourse to the farther use of the crooked needle and  
liga-



ligatures to tye up those vessels, which at first did not appear to bleed, but which now bled very freely: this method effectually answered the present intention, and there was no return of the *hæmorrhage* till the sixth day after the performance of the operation, when the wound bled again profusely.

UPON this accident the patient lost so great a quantity of blood as greatly exhausted him before any assistance could be given him, which was again attempted by repeated use of the needle and ligatures, but in vain; for upon endeavouring to pass the needle through the fleshy portions on each side of the vessels, the parts were found so loose, and so rotten, as to be incapable of admitting of this process, and of the necessary stricture with the ligature without tearing them away: this determined the Surgeon who attended the patient to try the effects of a piece of agaric, which he applied to the wound, and retained upon it for forty-eight hours; at the end of forty-eight hours, the whole of the agaric was removed.

FROM the time the agaric was applied there was no return of the bleeding; and every thing went happily on till the cure was completed.

## C A S E LXXIII.

*Of an Amputation of the Leg, above Knee, where the Agaric was applied with Success.*

**D.** F. a young lad aged 16 years, had for a long time been afflicted with a disease of his right knee, attended with a considerable enlargement, and caries of the bones, (to wit, the lower extremity or condyles of the *os femoris*, and the upper appendage of the *tibia*) the swelling was accompanied with several fistulous ulcerations of the integuments, and ligaments of that joint.

THE discharge from the wounds was very considerable, foetid, and oily. The parts of the limb above the knee, as well as those below the knee were much wasted.

The patient was almost continually in great pain, his appetite was very bad, and he could get but little rest: for these several reasons I cut off the limb a little above the diseased portion of the thigh-bone. After the amputation of the limb, I applied the  
agaric

agaric to the *femoral* artery, and its collateral branches, together with the lint, pledgit of cerate, soft comprefs of tow, and the bandages as usual.

THE tourniquet, and ligature were kept moderately tight upon the upper part of the thigh for a quarter of an hour after the operation : at the end of a quarter of an hour, the tourniquet and ligature were removed.

THE patient had no bleeding at all during the progress of his cure, which was perfected in about ten weeks.

HE took no opiate after the operation, and there were no severe spasms of the stump : but notwithstanding the success that attended the use of the agaric in this operation, I considered the risque of a great and sudden loss of blood, from the mouth of so large an artery as that of the thigh to be very great ; supposing the agaric had slipped by any means from the parts to which it was applied ; and for this reason alone, I have never since applied the agaric upon the divided *femoral* artery.

## REMARK.

IN amputations of the leg above the knee, I have in a variety of subjects, and with very considerable advantage, applied a few slips of sticking-plaister across the stump, each of these slips of plaister must be about an inch broad, and sufficiently long to extend from one side of the wound to the other; in the same manner as Monsieur *LeDran* has recommended in his Description of the Amputation of the Thigh in his excellent Treatise of Operations.

THESE slips of plaister not only serve the purpose of contracting the wound in an effectual manner; and that without the least degree of present, or future pain to the patient, but at the same time they make a very necessary pressure upon the integuments, which are by this contrivance so far brought forwards and retained upon the surface of the divided vessels, and muscles of the limb, as in a great measure to prevent a second hæmorrhage, which upon the encrease of the symptomatic fever, very often happens from the smaller vessels of the wound being more than usually dis-



distended by the increased velocity, and force of the blood.

WHEN these several slips of plaister are made use of, the custom of compressing the stump with the palm of the hand, for many hours after the operation, is in a great measure unnecessary.

THE slips of plaister should not be removed from the stump till they become quite loose, and are near falling off, which in general they will be found to be at the second or third time of dressing the wound ; that is, in about six or seven days after the operation ; when fresh slips of plaister should again be applied across the stump, in the same manner as was at first done.

THE application of these plaisters may be repeated as often as is thought necessary.

IN amputations of the arm above the elbow, I have made use of the same kind of transverse plaisters to advantage ; but in amputations of the leg below knee, and in amputations of the arm below the elbow ; on account of the tightness of the integuments, and muscles, as well as by reason of the increased surface of the bones in these parts, the application of the transverse plaisters will  
not

not be found so useful and advantageous as they will be above the knee, or elbow-joints; where there is one bone only, and where the integuments and muscles are more loosely connected together, and to the subjacent bone.

*N. B.* THE application of these transverse slips of plaisters will not only be found beneficial in amputations of the leg above the knee, and in amputations of the arm above the elbow, but they will often be found serviceable in amputations of breasts, and in the extirpation of large encysted tumours from the head, face, trunk, or extremities.

THE length and number of these slips of plaster must differ according to the size of the wound.

FOR the stumps of young subjects two of these slips of sticking-plaster about an inch in breadth will be found sufficient: but in adults, I generally apply three or four slips of the plaster for this purpose.

BEFORE these slips of plaster are applied, a single headed roller, about three inches broad, and six or seven yards long, must be carried twice round the waste of the patient, and from thence the roller must be applied  
round

round the thigh in a spiral manner till it arrives within an inch of the edges of the wound, where it is to be confined by pinning or sowing the roller; taking care not to apply the bandage so tight as to give pain, nor so slack as to admit of the receding of the integuments. If the amputation be of the arm above the elbow, the same kind of roller must be conveyed obliquely across the upper part of the trunk, and from thence must be continued to within an inch of the edges of the wound previous to the application of the layers of plaister. When we have proceeded thus far, a quantity of lint, sufficient to cover the end of the stump, must be applied upon the sticking-plasters: but no lint or any other application should be made to the wound before the plaisters are layed across the stump, since that would in some degree prevent the lips of the wound from so nearly approaching one another as they otherwise would do: over the lint and layers of plaister, a pledgit of soft tow, spread with some cooling ointment, and upon the pledgit, a thick broad and square compress of the same kind of tow must

must be placed, as is usually done in these operations.

THE dressings in general need not be removed till four days after the performance of the operation, unless there should be a necessity for so doing on account of a second hæmorrhage, or for any other good reason.

## C A S E LXXIV.

*Of an Amputation of the Arm above the Elbow, where the Agaric was applied with Success.*

MAY 1755, J. C. aged 33 years, was afflicted with a disease of the elbow-joint, attended with a considerable enlargement of the condyles of the *Os Humeri*, and the *Processus Olecranon* of the *Ulna*; there were several fistulous ulcers that appeared externally; from whence so great a quantity of thin, oily, fœtid matter was continually discharged, as very much reduced him. The patient was hectic, and the part diseased was in so great and constant pain as to render life insupportable. The limb above the elbow-joint, was considerably wasted: upon introducing



ducing a probe through either of the fistulous ulcerations, a very evident caries of the bones was discoverable, attended with such a softness of them as easily admitted of the probe being past into their very substance. From these circumstances it was thought necessary to cut off the arm, which was done above the elbow, a little above the enlargement of the bones. After the amputation of the limb, pieces of agaric were applied to the mouths of the divided arteries, together with the lint, &c. as usual. The tourniquet ligature was kept moderately tight upon the arm for ten minutes after the operation; at the expiration of that time, the ligature was let quite loose: there was no discharge of blood from the wound.

THE patient was dressed the fourth day after the operation, when the whole of the agaric was removed, and no bad symptom or loss of blood followed. The wound was well in eight weeks, and the patient, soon after his recovery, returned home in good health.

## CASE LXXV.

*Of an Amputation of the Arm above the Elbow,  
where the Agaric was applied with Success.*

**J**. R. aged 8 years, was afflicted with a disease of the elbow-joint, attended with symptoms so similar to those attendant upon the preceding case of J. C. page 380, as to make it unnecessary to say any more than that, for the same reasons as are there assigned, it was thought adviseable to amputate the limb; which was done in *July* 1755, at a small distance above the condyles of the *Os Humeri*. After the amputation was finished, bits of agaric were applied to the mouths of the arteries, which were secured on as usual: there was no bleeding ensued, and the patient went very well on for four weeks. But being extremely weak and emaciated before the operation, the patient from this time began daily to decline, and at the end of six weeks the patient died, but not before the wound was upon the point of being healed.

CASE

## CASE LXXVI.

*Of an Amputation of the Leg below the Knee, attended with singular Circumstances, where the Agaric failed of Success.*

**R.** U. a boy of six years and an half old; had for some time been diseased with a scrophulous tumour of the ankle-joint of his left leg, attended with a caries of the inferior extremities of the *tibia*, the *fibula*, and the bones of the upper part of that foot: the discharge from the wounds was very great, and its consistence oily; it tinged the dressings with a blackish colour, and was offensive to the smell. On the twenty-first of *February* 1755, the patient was admitted into the Hospital under my care, where he continued for twelve months without receiving any benefit, but on the contrary grew worse; his leg gradually wasted away, his appetite fell off, and the patient could rest but little; on this account the amputation of the leg below the knee was recommended, and put in practice: the agaric was applied to the vessels

as

as described in the preceding cases ; the tourniquet ligature was kept upon the lower part of the thigh for about ten minutes after the operation ; the patient had a very slight degree of symptomatic fever, and every thing went happily on until the third day, when the boy unfortunately received a blow from a large piece of wood that fell upon the stump ; this accident brought on a bleeding of the wound, but by a gentle compression being made with a fresh roller that was applied upon those dressings which were at first made use of, the bleeding stopped ; and so remained until two days afterwards ; when all the dressings were removed with the several pieces of agaric, that I might examine into the appearance of the wound : soon after the removal of the bits of agaric, the principal arteries bled very freely ; to wit, the *Tibialis Antica*, *Postica*, and *Peronea*, though in a small and contracted stream : as I had no fresh agaric at hand I tied the vessels, and afterwards covered the whole surface of the wound with lint that was first dipt in wheat-flour. In a very few hours after the wound was dressed, the boy complained of severe pain, accompanied with  
a symp-



a symptomatic fever; two days afterwards, there was a considerable quantity of thin blood of a very pale colour, which discharged from the stump in a stream: upon a removal of the roller and dressings, the blood appeared to ooze from the greatest part of the surface of the wound, as though it had been squeezed through a soft sponge; for this reason I dressed up the wound with lint dipt in hot spirits of turpentine, kept the tourniquet ligature applied moderately tight upon the thigh, and put the boy into a course of the *Peruvian* bark, which was continued for near three weeks: for the first six or seven days, the patient took half a drachm of the powder of bark every three hours: for the remaining part of the time the patient took the same quantity once every six hours: soon after the patient began to take the bark, the discharge from the wound changed its consistence and colour, till at length it acquired the appearance of a well digested, white, and thick matter; at the end of ten weeks, the wound was healed, and the patient was discharged with all the appearance of good health.

## R E M A R K.

IN all morbid bleedings that succeed an operation, where I have been concerned, I have given the bark with the greatest success; and I have sometimes used the bark previous to an operation, as a means to prevent the probability of a succeeding *hæmorrhage*; which so far as I can judge of a medicine taken as a preventive, has generally answered my expectation in those habits of body where the state of the blood has been much impoverished through a general relaxation and weakness of the body, proceeding from a slow fever, great and almost continual pain, want of rest, and a profuse discharge.

## C A S E LXXVII, &amp;c.

*Where the Agaric was unsuccessfully applied below the Knees after the Limbs were Amputated.*

*M. H.* a poor woman of 44 years of age had been afflicted with a carious ulcer of the internal and inferior extremity of the  
*tibia*

*tibia* for near twenty years. On the tenth of *October* 1756, the patient was put under my care; the discharge from the wound was exceedingly great, its consistence oily, its colour somewhat black; its smell fœtid; the pain she endured was intolerable: from these several causes her constitution became much impaired. In hopes of saving the patient's life, which was judged to be in extreme danger; it was thought adviseable for her to submit to the loss of her limb. The operation was performed below the knee on the eighteenth of the same month: immediately after the amputation of the leg, the agaric was applied to the divided arteries, with lint, pledgit and rollers as usual: the tourniquet ligature was kept moderately tight upon the *femoral* artery for a quarter of an hour: when the ligature was let so loose as to have little or no degree of pressure upon the thigh: the wound did not bleed for a quarter of an hour after the slackening of the ligature, but at the end of that time the *hæmorrhage* came on: on this account I tightened the tourniquet ligature, removed the dressings, and made use of the crooked needle and ligature to the several principal arteries: soon after the

vessels were tied, the patient complained of excessive pain, attended with frequent spasms of the limb; which symptoms continued with very little intermission (notwithstanding the use of opiates and such other medicines as were thought proper upon this occasion) till the fourteenth day after the operation, when the patient began to complain of a pain and foreness in the muscles of the throat; these complaints were gradually succeeded by an inability in the action of those muscles whose uses are to depress the lower jaw, to wit, the *Platysma Myoides* and *Digastricus* on each side, and with a præternatural spasmodic contraction of those muscles which serve to lift up the lower jaw, to wit, the *Temporalis*, *Masseter Pterygoideus internus*, and *Pterygoideus externus* on both sides. From the moment the patient complained, I suspected that the too often fatal symptom of a locked jaw was approaching: to prevent which, the sides and fore-part of the neck were covered with plaisters, and the patient was recommended to the farther care of the Physician, but unsuccessfully.

ON the third day after the patient was attacked with this complaint in her throat,  
her



her lower jaw became immoveably fixed, and the night of the same day the patient expired.

*Query.* Is it not reasonable to suppose, that this fatal symptom of a locked jaw arose from the pain occasioned by the strictures that were made by the ligatures, and that the recovery of this patient might reasonably have been expected, had there been no necessity of having recourse to the severe, but in this instance absolutely necessary method of stopping the *hæmorrhage* by tying the vessels ?

THAT the pain immediately attendant upon, and subsequent to the several strictures of the extremities of the vessels and neighbouring nerves, were the principal, though not the only cause of this fatal symptom, seems probable.

THAT the symptom of a locked jaw does sometimes arise from fractures of the limb, dislocations of the joints, or from wounds of the *Tendinous* and *Ligamentous* parts of the body, where no ligatures are applied, is well enough known to men of experience ; however it may be worth observing, that this cruel symptom has not once occurred in the several

amputations where the agaric has succeeded under my inspection; that such spasms as follow the use of the needle and ligature in a very severe degree are very slight where the bleeding has been stopt by the application of the agaric; and that the want of success arising from a loss of blood has never once happened in the several instances where I have applied it.

IN amputations of breasts I have never as yet been under the necessity of taking any other method for stopping the blood, but by the application of the agaric since I first became acquainted with its uses, though I have often performed these operations. It must therefore, under many circumstances, be esteemed an useful remedy, notwithstanding in the larger vessels it too often proves insufficient.

I MUST acknowledge, after the repeated experiments which I have made with the agaric upon the vessels of amputated limbs, I am convinced, that this method of stopping the flux of blood is not so absolutely to be depended upon as I had good reason to believe it might be, from the many successful trials  
I had

I had made with it at the times I published the first and second editions of this small work; therefore I cannot now so strongly recommend it as I had done before it ever failed me.

WHENEVER the agaric has not answered my expectation, it has shewed its insufficiency within less than an hour after it has been applied to the vessels; except in the case of *R. U.* page 383, where the bleeding of the wound that ensued the third day after the operation I think may be fairly attributed to the blow which the stump received. In our Hospitals it is always a custom to leave an able person upon the spot for a night or two, or longer after any capital operation, let the method taken for staunching the blood be by ligature or otherwise; because it is very well known, that the symptomatic fever, subsequent upon all painful operations; does encrease the velocity of the circulation; for this reason, as well as on account of the sudden check the blood meets with from the shortness of the principal arteries after so great a portion of them is taken away, as is known to be the case in the amputation of a limb, the smaller collateral vessels become forcibly acted upon, their

*Diameters* are encreased, and a second and third *hæmorrhage* very often ensue; so that the pain being the immediate cause of the symptomatic fever, the velocity of blood must be greater or lesser in proportion to the degree of pain that ensues; and consequently where the agaric that has been applied upon the arteries is powerful enough to succeed, a bleeding from the smaller vessels will be less likely to happen, than where more painful methods are taken for this purpose. ✓

BESIDES the two cases of *R. U.* and *M. H.* see pages 383, 386, which have been particularly described, three more instances of the failure of the agaric in adults have occurred to my experience in amputations of legs below knee. In all these cases, except that of *R. U.* it is but just to observe, that the agaric which failed was of a very different texture and appearance from that which I so often succeeded with.

THE agaric that never failed me, except in the case of *R. U.* page 383, had the appearance of soft leather, with a pile upon its surface something like velvet. This agaric was thin, pliant, and capable of being adapted to, and retained upon the mouths of the vessels with  
very



very little trouble : the other agaric was thick, rough and hard ; for these reasons it was very difficultly adapted to the vessels, and very apt to slip from their mouths when it was placed upon them. To these causes I think its want of success may be attributed. Whether the agaric, when it has succeeded, acts upon the vessels by compression ; whether it acts upon them as a styptic ; or whether it acts by choaking and stopping up the mouths of the vessels, is a point difficult to be ascertained ; probably all these powers may have contributed to the effects it has so often produced.

To the several cases I have given, in which I have used the agaric with success, I could add many more : but as I am unwilling to appear partial in my accounts, I shall finish with declaring it is not my intention to mislead, or persuade practitioners to follow any method they disapprove of ; it is sufficient for me to give an ingenuous account of the experiments I have made : which I will take upon me to say I have faithfully done in every passage of this small work ; for the veracity of which there are a great many who can testify that were present at these operations, and very diligently attended to the event of them.

CASE

## C A S E LXXVIII.

*Of an Amputation of the Leg, below Knee, where the Agaric was unsuccessfully applied.*

*F. L.* a young man 24 years of age, on the eighteenth of *October*, 1759, had his leg amputated below knee on account of a large ulcer, attended with a caries of a considerable portion of the whole substance of the *tibia*, and *fibula*. The sore, which took its rise from an ague and fever, had been of about five years standing; there was so considerable a loss of substance of the integuments, muscles, and *periosteum* of the diseased bones; and the discharge from them was so great, attended with excessive pain, a loss of appetite, and a wasting away of the whole body, as rendered it adviseable for the patient to submit to this operation.

AFTER the limb was cut off, bits of agaric were applied to the mouths of the three principal arteries of the stump; to wit, the *Arteria Tibialis antica*, *Tibialis Postica*, and *Peronæa*.

OVER the agaric dossils of lint were appled; the rest of the wound was covered with dry  
lint

lint only; upon which were applied a pledgit and comprefs of soft tow as ufual.

THE tourniquet ligature was kept moderately tight upon the thigh for a quarter of an hour; at the end of that time it was let quite loofe.

IN a few minutes after the loofening of the ligature, the wound bled. Seeing this, the ligature was tightened for feveral minutes, and then it was let loofe again; upon which the bleeding returned.

FOR this reason the dressings were removed from the wound, that it might be known from whence the blood flowed, which it appeared to do from the *Arteria Tibialis antica*; from the mouth of that vefsel the agaric had flipped: but the other principal arteries of the ftump, to wit, the *Arteria Tibialis poftica* and *Peronæa*, difcharged no blood at all, till the bits of agaric were taken away, when the needle and ligature were made ufe of: the bits of agaric that were removed from the *Tibialis poftica* and *Peronæa* ftuck very clofe to the parts, and required fome force to remove them. Ever fince the operation, which is now thirty days, the young man has been tormented with very frequent and fevere fpafms of the ftump; and the patient has continually complained of  
that

that common, but unaccountable sensation of twitchings, and pains in the limb (particularly in the old wound and in his toes) which has been so long removed from his body.

*N. B.* This is one of the cases already taken notice of amongst those where the agaric has been said to be unsuccessful. See the case of *M. H.* page 386.

*N. B.* This patient went on with a good prospect of doing well till the fifth week after the operation, when he was seized with a pain in his breast and fever, which seem to threaten the greatest danger.

## C A S E LXXIX.

*Of an Amputation of a Breast where the Agaric was successfully applied.*

*E. W.* 64 years of age, a woman of a thin habit of body, was according to her own account attacked with a tumour in her left breast about eight years ago.

UPON



UPON the first appearance of the disease, and for somewhat more than seven years after the patient discovered the swelling, she had but little uneasiness in the part: now and then she remembers to have felt some slight pricking pains in that breast.

THE patient has been subject to hysterical complaints for thirty-six years, which arose from a weakness that happened in consequence of a lying-in.

WITHIN the last eight months preceding the operation, the tumour encreased very fast, and at length had arrived to a considerable size and extent.

THE whole of the breast had acquired a scirrhus and livid appearance: there was no swelling, hardness, or discolouration in the *Axilla*, nor in any other part of her body, (circumstances absolutely necessary to be minutely attended to before the operation is determined upon) so that, as far as could be known from any enquiry I was able to make, the disease was local.

FOR this reason I recommended the amputation of the breast; to which the patient readily assented, and I performed the operation on the twenty-third of *October* 1759: after  
the

the breast was cut off, the blood appeared to flow from four considerable arteries, the largest of which was that branch which was nearest to the *Axilla*. I applied bits of agaric upon the mouths of the four arteries: and over the bits of agaric I applied doffils of lint as usual. I then covered the whole of these applications with a pledgit of soft tow spread with *Cera-tum album*, and upon the pledgit I applied a compress of tow; all of which I bound gently on with a flannel roller about four inches broad, and six yards long: having first placed a bolster of soft tow under each arm-pit, which should always be done to keep the roller properly adapted to these parts, and to prevent it from being so liable to slip as it otherwise would be. The flannel roller I think is preferable to a linen one upon these occasions, as flannel is more warm than linen, more pliant, and more agreeable to the motions of the trunk in the acts of respiration. It is for these reasons that I always make use of a flannel roller in fractures of the ribs.

For some minutes after the patient was dressed, and in bed, a small discharge of blood oozed through the dressings and bandage: but this discharge stopped without any farther trouble.

THE patient's wound was dressed on the fourth day after the operation: when all the applications in general were removed: the wound had a very desirable appearance, and discharged a proper quantity of matter very little stained with blood.

FROM this time the patient proceeded happily on, and is in a fair way of being soon well. It is now six weeks since the operation was performed.

R E M A R K.

IT may be observed from this instance, amongst others, that indurated tumours of the breast, which have the appearance of schirri, do sometimes remain for many years in an indolent state, without undergoing much alteration either in size, discolouration, or pain; this I have known several times in young women: from hence we may infer, that when this kind of tumour is thus circumstanced, there is no necessity for proceeding hastily to the extirpation of the part: occasional bleedings, gentle purges, and an abstemious diet with warmth, being all that is necessary to be done for the patient: but when the case is very differently.

ferently circumstanced; that is, when the tumour encreases fast, the part becomes painful, together with, or without a discolouration, of the integuments, it is then absolutely adviseable for the patient to submit to the extirpation as soon as may be: supposing there should be no other complaint that forbids the operation; since by injudiciously deferring the operation too long, it sometimes becomes absolutely improper on account of an adhesion of the tumour to the *Pectoral* muscle, and ribs.

E X P L A-



# EXPLANATION OF THE PLATES.

Explanation of PLATE I. See Page 90.

This Plate represents the Human Eye, and two Couching-Needles.

- A. The exact size of the Couching-Needle, which I would recommend to be used in this Operation.
- B. The Couching-Needle passed through the Coats of the Eye into the posterior Chamber, with the Blade of that Instrument lying upon the *Cataract*, or diseased *Christalline* Lens. This Needle is engraved short enough to be capable of being contained within the breadth of this Sheet.
- C. The Eye.
- D. The *Cornea*.
- E. The anterior Chamber of the Eye.
- F. The *Tunica Iris*.

D d

G. G. The

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G. G. The posterior Chamber of the Eye.

H. H. The *Processus Ciliares*, or posterior  
*Lamina* of the *Iris*.

I. The *Christalline* Lens, or Humour.

Fig. 1. The *Sclerotica*.

Fig. 2. The external *Lamina* of the *Choroides*.

Fig. 3. The internal *Lamina* of the *Choroides*.

Fig. 4. The *Tunica Retina*.

Fig. 5. The oblique Insertion of the Optic  
Nerve.

All that Space betwixt the internal Surface of the *Cornea* and the *Iris* is called the anterior Chamber of the Eye.

All that Space betwixt the *Iris* and the *Christalline* Lens is called the posterior Chamber of the Eye. Both these Spaces are naturally filled with the Aqueous Humour of the Eye.

That part of the Eye behind the *Christalline* is filled with the *Vitreous* Humour, which on its anterior Part forms a Bed for containing the posterior Part, or more Convex Surface of the *Christalline* Lens.

Explanation of PLATE III. See p. 124.

THIS is an exact representation of the Knife which I made use of for the extirpation of the remarkable tumour, or enlarged *Tonsil*, situated upon the Roof of the Mouth, and in the Throat of *J. M.* described in Case XVI. Page 117, the Circumstances attending this Enlargement are minutely related in the course of that Chapter.

Explanation of PLATE IV. See p. 162.

PLATE the fourth exhibits the expansion and thickness of the Coats, with the internal Appearance of the diseased *Femoral* or *Crural* Artery of *J. R.* described in Case XXV. page 156, after that Vessel was opened longitudinally, and cleansed of its Contents.

THE same Drawing likewise represents the *Femoral* or *Crural* Artery nearly of its natural Size below the dilated Portion of that Vessel, with a Bougie through it.

Explanation of PLATE V. See p. 162.

PLATE five represents that Portion of the coagulated Blood which had acquired the Texture and Appearance of brown macerated Leather.

THE middle and black Part of this Picture represents a remarkable Cavity or Calix, more than two Inches deep : in this hollow Part a considerable Quantity of coagulated Blood was deposited, that had not as yet acquired a firm and fibrous Appearance.

Explanation of PLATE VI. See p. 162.

PLATE six exhibits the posterior part of the *Os Femoris* of *J. T.* described in the preceding Case, with the Caries of that bone, and the several small Exostoses, or Excrescences already taken notice of.

THESE Defects on the back part of the Bone I very readily discovered, by introducing my Fingers into the Incision made through the upper part of the Tumour.

N. B.



N. B. As the Size of this Plate is not sufficiently large to admit of that Portion of the Bone which was sawed off, being drawn of its natural bulk and length, it may not be amiss to take notice, that the Bone measured eight Inches and three Quarters, which explains how much of the Limb was cut off in this Operation.

A. Represents the amputated Portion of the Thigh-bone of *Ÿ. Ƴ.* after it was cleaned.

B. B. The Condyles of the *Os Femoris*.

C. D. E. The Caries, and those several small Exostoses, or bony Excrescences, which appeared upon the surface of the back part of this Bone in the course of the *Linea aspera*.

F. The natural Cavity formed betwixt the Condyles of the *Os Femoris*.

Explanation of PLATE VII. See p. 162.

PLATE seven exhibits the posterior Part of the Thigh-bone of the second Subject, whom I have taken notice of in Case XXV. p. 160.

THE Caries or Rottenness of the posterior Part of this Bone, a little above and betwixt its Condyles, was so deep as to extend to and  
com-

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communicate with the raticular *Plexus* of the inferior Extremity of the Thigh-bone.

THE part of the Thigh-bone that was removed in this Operation measured seven Inches and an half.

A. Represents the amputated Portion of the *Os Femoris* of the above Subject, after it was sawed off and cleaned.

B. B. The Condyles of that Bone.

C. D. Those Parts a little above and betwixt the Condyles which appeared very much decayed.

Explanation of PLATE VIII. See p. 240.

Fig. 1. Exhibits the *Calculus* taken notice of in Page 239, that was cut out of the *Urethra* of S. B. As the exact length and size of this Stone are represented by this Figure, I think it unnecessary to give a written account of these Particulars: however, it may probably give some satisfaction to the curious, if I observe, that this Stone weighed six Drachms thirty-five Grains Averdupoise weight; that the longest and smallest end of the Stone was situated nearest to the Neck of the Bladder or Origin of the *Urethra*: that on the Surface of the

the Stone there are two long Grooves or Channels, which are represented by the Streaks or Lines running on the superior Parts of this Stone; these Grooves were formed by the Streams of Urine that were occasionally discharged from the Bladder; and furthermore it may be observed, that the whole Substance of this Stone, (excepting its very Surface which was somewhat rough, and from which there arose several Eminences) had an uniform, highly polished Appearance; resembling in smoothness a bit of polished Glass, there being not the least marks of any distinct *Laminæ* in the Structure and Conformation of this Stone.

THIS Stone was situated in *Perinæo*.

*Query.* Is it not probable, that the generation of this Stone might originally have begun in the *Urethra*, as the Patient does not remember ever to have had the least Complaint in his Loins, or any Part of his Bladder; or is it more reasonable to suppose, that this Stone was first of all formed in the Urinary Bladder, from thence conveyed with the Stream of Urine, when very small, and lodged in the *Urethra* till it had arrived to this size.

EITHER

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EITHER of these Suppositions to me appears reasonable. However, as Hypotheses of this kind are very difficultly ascertained, and as a Discovery of the Fact, could it be determinately made, would prove of very little Consequence in Practice, I shall no longer dwell upon a Subject, in which the Interest of Mankind appears to me to be so little concerned:

## F I N I S.

### E R R A T A.

Page. Line.

- 72 24 For operation, *read* operations.
- 76 11 For away, *r.* way.
- 78 9 *Read* that.
- 95 — last line but one, for indifferntly, *r.* indifferently.
- 101 4 After the word cataracts, dele ;
- 10 For affected, *r.* effected.
- 177 3 *Read* Apothecary.
- 177 8 — following.
- 202 22 — lady's.
- 210 27 — stomach.
- 245 6 — vagina.
- 274 18 For IX. and X, *r.* X. and XI.
- 275 1 — X. *r.* XI.
- 277 16 *Read* operation.
- 293 — last line but one, for on, *r.* one.
- 327 7 For on, *r.* or.
- 346 2 *Read* after.
- 388 23 Add blistering before plasters.
- 394 — last line but one, for applied, *r.* appliéd





